To: James Cashwell
From: Chris Ricardi
Date: November 25, 2013
Subject: Olin Chemical Superfund Site – November 2012 and June 2013 PCB Soil Sampling Program

DATA VALIDATION SUMMARY
NOVEMBER 2012 and JUNE 2013 PCB SOIL SAMPLING PROGRAM
OLIN CHEMICAL SUPERFUND SITE
WILMINGTON, MASSACHUSETTS

TestAmerica Data Sets 480-28969-1, 480-40373-1, 480-40373-2, and 480-40373-3

1.0 INTRODUCTION

Data validation was completed on nineteen soil samples collected on November 20, 2012 and June 17, 2013. Samples included in this review are summarized on Table 1. Samples were analyzed by TestAmerica Laboratories (TAL) in Buffalo, New York and reported in sample delivery groups (SDGs) 480-28969-1, 480-40373-1, 480-40373-2, and 480-40373-3. Samples were analyzed for polychlorinated biphenyls (PCBs) by USEPA Method 8082 following protocols included in the Massachusetts Department of Environmental Protection (MassDEP) guidelines (MassDEP, 2010).

Sample results and lab data were validated in accordance with the Final Project Operations Plan Volume III-B Quality Assurance Project Plan (QAPP) [MACTEC, 2009]. A modified Tier II data validation was completed on SDG 480-28969-1. Tier III (10%)/Tier II (90%) data validation was completed on SDGs 480-40373-1, 480-40373-2, and 480-40373-3.

A complete summary of final sample results is included in Table 2. A summary of validation actions and qualification reason codes are summarized in Table 3.

2.0 PCBs

QC evaluations were based on project specific method performance objectives described in the QAPP [MACTEC, 2009] and professional judgment of the project chemist. Analytical packages were reviewed using data quality evaluation checklists that were developed specifically for the Olin Chemical Superfund Site. Validation included a full review of all documentation and data associated with sample collection, shipment, and analysis. The following items were reviewed:

* Data Package Narrative, Completeness, and Chain of Custody (COC) Records
* Sample Collection, Preservation, and Holding Times
* Instrument Calibration
* QC Blanks
* Surrogates

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* Matrix Spike / Matrix Spike Duplicates (MS/MSD)
* Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)
  Field Duplicates
  Dual Column Confirmation
* Reporting Limit Review
* Raw Data Checks and Calculations Verification
* Electronic Data Verification

* = Indicates that all criteria were met for this quality control parameter

Field Duplicates

The relative percent difference (RPD) between sample OC-SB-537-0.0/1.0-XXX and its field duplicate OC-DUP was outside the QC limit of 50 for Aroclor-1260 (65). The detections of Aroclor-1260 in samples OC-SB-537-0.0/1.0-XXX and OC-DUP were qualified as estimated (J).

Dual Column Confirmation

The percent difference between primary and confirmation column for Aroclor-1260 detections was outside the QC limit of 25 in samples OC-SB-530 3.5/4.0-XXX (42), OC-DUP (25.5), and OC-SB-537-3.5/4.0-XXX (35). Aroclor-1260 detections in samples OC-SB-530 3.5/4.0-XXX, OC-DUP, and OC-SB-537-3.5/4.0-XXX were qualified as estimated (J).

Chris Ricardi, NRCC-EAC
Senior Chemist

November 25, 2013
Date

Michael Murphy
Project Principal

November 25, 2013
Date

REFERENCES:

Massachusetts Department of Environmental Protection (MassDEP), 2010. "The Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan (MCP)"; Bureau of Waste Site Cleanup; 1 Winter Street, Boston, Massachusetts 02108; WSC-CAM; July 2010.

MACTEC Engineering and Consulting, Inc. (MACTEC), 2009. "Final Project Operation Plan Volume IIB Quality Assurance Project Plan"; Olin Chemical Superfund Site; 51 Eames Street; Wilmington, Massachusetts; August 2009.

U.S. Environmental Protection Agency (USEPA), 1996. "Region 1 EPA-NE Data Validation Guidelines for Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

Table 1
Sample Summary
Data Validation Report
November 2012 and June 2013 PCB Soil Sampling Program
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Field Sample ID	Date Sampled	Lab Sample ID	SW8082 PCBs	E160.3 Percent Solid
SS-501	OC-SS-501-0.0-1.0-XXX	20-Nov-12	480-28969-1	9	2
SS-502	OC-SS-502-0.0-1.0-XXX	20-Nov-12	480-28969-2	9	2
SS-503	OC-SS-503-0.0-1.0-XXX	20-Nov-12	480-28969-3	9	2
SS-504	OC-SS-504-0.0-1.0-XXX	20-Nov-12	480-28969-4	9	2
SS-505	OC-SS-505-0.0-1.0-XXX	20-Nov-12	480-28969-5	9	2
SS-506	OC-SS-506-0.0-1.0-XXX	20-Nov-12	480-28969-6	9	2
SB-530	OC-SB-530-1.0/3.0-XXX	20-Nov-12	480-28969-7	9	2
SB-531	OC-SB-531-1.0/3.0-XXX	20-Nov-12	480-28969-8	9	2
SS-509	OC-SS-509-0.0-1.0-XXX	20-Nov-12	480-28969-9	9	2
SS-507	OC-SS-507-0.0-1.0-XXX	20-Nov-12	480-28969-10	9	2
SS-508	OC-SS-508-0.0-1.0-XXX	20-Nov-12	480-28969-11	9	2
SB-536	OC-SB-536-0.0/1.0-XXX	17-Jun-13	480-40373-1	9	2
SB-536	OC-SB-536-2.5/3.0-XXX	17-Jun-13	480-40373-2	9	2
SB-535	OC-SB-535-2.5/3.0-XXX	17-Jun-13	480-40373-4	9	2
SB-530	OC-SB-530 3.5/4.0-XXX	17-Jun-13	480-40373-6	9	2
SB-537	OC-SB-537-0.0/1.0-XXX	17-Jun-13	480-40373-7	9	2
SB-537	OC-SB-537-2.5/3.0-XXX	17-Jun-13	480-40373-8	9	2
SB-537	OC-SB-537-3.5/4.0-XXX	17-Jun-13	480-40373-9	9	2
SB-537	OC-DUP	17-Jun-13	480-40373-10	9	2

Notes:

Number listed under method indicates number of target analytes reported.

Prepared by / Date: KJC 10/29/13

Checked by / Date: BBL 10/30/13

Table 2
Final Results Summary
Data Validation Report
June 2013 PCB Soil Soil Sampling Program
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SB-530		SB-535		SB-536		SB-536		SB-537		SB-537	
			Field Sample ID	OC-SB-530 3.5/4.0-XXX		OC-SB-535-2.5/3.0-XXX		OC-SB-536-0.0/1.0-XXX		OC-SB-536-2.5/3.0-XXX		OC-DUP		OC-SB-537-0.0/1.0-XXX	
			Field Sample Date	06/17/13		06/17/13		06/17/13		06/17/13		06/17/13		06/17/13	
			QC Code	FS		FS		FS		FS		FD		FS	
			Lab Sample Delivery Group	480-40373-1		480-40373-1		480-40373-1		480-40373-2		480-40373-1		480-40373-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8082	Aroclor-1016	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1221	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1232	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1242	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1248	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1254	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1260	ug/kg	19	J	0.1	U	1500		0.11	U	33	J	65	J
N	SW8082	Aroclor-1262	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	SW8082	Aroclor-1268	ug/kg	0.11	U	0.1	U	0.1	U	0.11	U	0.098	U	0.094	U
N	E160.3	Percent Moisture	percent	16		8		5.7		9		4.2		5.4	
N	E160.3	Percent Solids	percent	84		92		94		91		96		95	

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the reporting limit
J = value is estimated
ug/kg = microgram per kilogram

Table 2
Final Results Summary
Data Validation Report
June 2013 PCB Soil Soil Sampling Program
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SB-537		SB-537	
			Field Sample ID	OC-SB-537-2.5/3.0-XXX		OC-SB-537-3.5/4.0-XXX	
			Field Sample Date	06/17/13		06/17/13	
			QC Code	FS		FS	
			Lab Sample Delivery Group	480-40373-2		480-40373-3	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual
N	SW8082	Aroclor-1016	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1221	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1232	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1242	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1248	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1254	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1260	ug/kg	1800		1500	J
N	SW8082	Aroclor-1262	ug/kg	0.11	U	0.11	U
N	SW8082	Aroclor-1268	ug/kg	0.11	U	0.11	U
N	E160.3	Percent Moisture	percent	14		11	
N	E160.3	Percent Solids	percent	86		89	

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the reporting limit
J = value is estimated
ug/kg = microgram per kilogram

Prepared by / Date: KJC 10/29/13
Checked by / Date: BBL 10/30/13

Table 3
Data Validation Action Summary
Data Validation Report
June 2013 PCB Soil Sampling Program
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
480-40373-1	480-40373-10	SW8082	OC-DUP	Aroclor-1260	33		33	J	DC-PD, FD	ug/kg
480-40373-1	480-40373-6	SW8082	OC-SB-530 3.5/4.0-XXX	Aroclor-1260	19		19	J	DC-PD	ug/kg
480-40373-1	480-40373-7	SW8082	OC-SB-537-0.0/1.0-XXX	Aroclor-1260	65		65	J	FD	ug/kg
480-40373-3	480-40373-9	SW8082	OC-SB-537-3.5/4.0-XXX	Aroclor-1260	1500		1500	J	DC-PD	ug/kg

Units:
ug/kg = microgram per kilogram

Validation Reason Codes:
DC-PD = Dual column percent difference exceeds limit
FD = Field Duplicate limit exceeded

Prepared by / Date: KJC 10/29/13
Checked by / Date: BBL 10/30/13

Validation Qualifier:
J = value is estimated

PESTICIDES/PCBs

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: Region I Organics (Draft 2/04)

TIER I / (II) / (III) (circle one) MOD TIER II 480-28969-1

SITE: Olin Chemical Project #: 6167130 016-01.10 SDG #: TIER II/III 480-40373-1, -2, -3

LAB #: TAL

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part III (Draft 2/04). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES NO NA	
Data completeness ☑ ☐ ☐ All data summaries, QC forms and raw data available from hard copy or electronic data package ☑ ☐ ☐Data summaries match EDD	Contact lab if missing data. Lab to respond with 24 hours.
Holding Times and Preservation ☑ ☐ ☐Hold times met (Waters – Extract within 7 days, analyze within 40 days. Soils – extract within 14 days, analyze within 40 days)	
Initial Calibration ☑ ☐ ☐ %RSD less than or equal to 20% ☑ ☐ ☐ RTs within windows	
Continuing Calibration ☑ ☐ ☐ %D less than or equal to 25% ☑ ☐ ☐ RTs within windows	
Instrument Blank ☐ ☐ ☑ Analyzed at beginning of 12 hour clock and at end of analytical sequence	
Blank Contamination ☐ ☐ ☑ Instrument blank contamination ☑ ☐ ☐ Method blank contamination ☐ ☐ ☑ Equipment/Rinseate blank contamination	Evaluate all blanks for contamination. Highest contaminant level used for action level. MB- 1242 – 28969 – ND IN SAMPLES – NO QUALS

PESTICIDES/PCBs

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: Region I Organics (Draft 2/04)

TIER I / (II) / (III) (circle one)

Surrogate Recoveries ☑ ☐ ☐ Surrogates percent recovery criteria met Pest/PCB for soil and water (30%-150%)	230% REC TMX OC-SB-530-1.0-3.0 BJT RUN @ 10X DILUTION NO QUALS – COULD NOT VERIFY (230%) WHICH COLUMN WAS REPORTED FROM DELIVERABLE PACKAGES
Matrix Spikes and Laboratory Control Samples ☑ ☐ ☐ MS/MSD percent recovery criteria met (Pest - water and soil 30-150%) (PCB – water and soil 40-140%) ☑ ☐ ☐ MS/MSD RPD criteria met. PCBs (soil or water < or = 50%). Pest (soil or water < or = 30%). ☑ ☐ ☐ LCS percent recovery criteria met (Pest and PCB = 40%-140%)	OK ~~65% RPD~~
Field Duplicates ☐ ☑ ☐ RPD criteria met (Pest/PCB = soil <50% and water <30%)	65% RPD OC-SB-537-0.0/1.0-XXX OC-DUP FD J POS
Target Compounds ☑ ☐ ☐ Reviewed narrative for anomalies	
PEST/PCB Identification ☑ ☐ ☐ Results reported from primary column ☐ ☑ ☐ PCB results < or = to 25% D between primary and confirmation column. ☑ ☐ ☐ Within RT windows DC-PD	SEE ATTACHED QC For positive results having %D between 25% and 100%, qualify result J. For positive results greater than reporting limit having %D > 100%, qualify result R or use professional judgment (NJ). For positive results less than reporting limit having %D > 100%, qualify result UJ at the reporting limit.

Validator's Signature: Bradley Bell

Date: 10/24/13

COULD NOT CONFIRM ON 28969 – NO RAW DATA, CALIBRATIONS, ETC SUPPLIED – ONLY RESULTS AND LAB QC

Reference:

MACTEC, Project Operation Plan Volume IIB, Quality Assurance Project Plan for Remedial Investigation/Feasibility Study – Olin Chemical Superfund Site, Wilmington Property, 51 Eames Street, Wilmington, MA", MACTEC Engineering and Consulting. .April 2009.

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

SITE: OLIN - WILMINGTON Project #: 6107130016-01.10 SDG #: 480-40373-1, 480-40373-2, 480-40373-3

LAB #: TEST AMERICA

Sample IDs: Attach tracking sheet and/or sample listing.

This checklist is designed to be used with USEPA Region I Validation Guidelines Part II (12/1996). During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

YES	NO	NA		
Holding Times and Preservation				
☑	☐	☐	Check the raw data including instrument run and extraction logs to verify reported sample extraction and analysis dates.	
☑	☐	☐	Review the sample check in log to determine if samples were properly preserved.	
Initial Calibration				
☑	☐	☐	Review the raw data to verify that analysis times were accurately reported for the initial calibration standards on Form VIII PEST.	AS APPLICABLE TO PCBS
☑	☐	☐	Review the raw data to verify that the low point standard concentrations, the midpoint standard concentrations, and the high point standard concentrations were accurately reported on Forms VI PEST-1 and PEST-2.	
☑	☐	☐	Review the raw data to verify that all the required analytes were analyzed in the standards and were accurately reported on Form VI PEST-1 and PEST-2.	
☐	☐	☑	Evaluate the raw data to verify that the reported resolution is correctly calculated and accurately transcribed for Individual Standard Mixtures A and B in the initial calibration on both columns. See Appendix F, Section II for the method of calculation.	
☐	☐	☑	Review the Individual Standard Mixtures A and B raw retention time data for calculation and transcription errors.	
☐	☐	☑	Review the raw calibration factor data and	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for
OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

			recalculate the calibration factors and %RSD for one or more of the single component pesticides; verify that the recalculated values agree within 10% of the reported values.	
☐	☐	☑	Confirm from the Individual Standard Mixtures A and B chromatograms that at least one of the three analyses for each of Individual Standard Mixtures A and B from the initial calibration sequence displays the single component pesticides at greater than 50 percent and less than 100 percent of full scale.	
☑	☐	☐	Review the raw data to verify that analytical run times were accurately reported.	
☑	☐	☐	Review the raw data to verify that the multicomponent analyte and surrogate concentrations were accurately reported.	
☑	☐	☐	Review the multicomponent analyte raw retention time data for calculation and transcription errors.	
☑	☐	☐	If applicable, review tabulated results of %RSD for multicomponent analyte standards.	
☑	☐	☐	Review and recalculate the calibration factors (and %RSD if applicable) for one or more multicomponent analytes; verify that the recalculated values agree within 10% of the reported values.	
☑	☐	☐	Confirm that the standard chromatogram peaks chosen for multicomponent analyte identification are greater than 25% and less than 100% of full scale deflection.	
☐	☐	☑	Review Standard Preparation Logs (if provided in the data package) to ensure that primary and secondary initial calibration standard concentrations are accurate and traceable to NIST standards.	
☐	☐	☑	Review and recalculate the calculated initial calibration standard concentration for one single component and one multicomponent analyte (if standards preparation documentation was provided in the data package). Verify that the calculated values agree within 10% of the laboratory reported values.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

Continuing Calibration	
☑ ☐ ☐ Review the raw data to verify that analytical run times are reported accurately by comparing the date and time of injection reported on the chromatograms with the date and time analyzed reported on Form VIII PEST.	AS APPLICABLE P PCBs
☐ ☐ ☑ Examine the chromatograms to verify that the reported peak resolution is correctly calculated and transcribed for the PEMs and the Individual Standard Mixtures A and B in the calibration verifications on both columns. See Appendix F, Section II for the method of calculations.	Verify that the recalculated values agree within 10% of the laboratory reported values.
☐ ☐ ☑ Review the raw data for samples analyzed after the last compliant calibration verification (either Individual Standard Mixtures A and B or PEM). Review the sample chromatograms to verify the presence or absence of peaks close to the expected retention time windows for any target pesticide.	
☑ ☐ ☐ Review the retention time data for each of the single component pesticides and surrogates in the midpoint concentration of Individual Standard Mixtures A and B and PEMs to verify that the absolute retention times have been correctly calculated and reported and are within the appropriate retention time windows. Review the retention time data on the chromatograms for each of the multicomponent analytes analyzed in the calibration verification.	
☑ ☐ ☐ Review the raw data from the midpoint concentration of Individual Standard Mixtures A and B and the PEMs to verify that the % D has been correctly calculated and reported. If applicable, review the raw data for each of the multicomponent analytes analyzed in the calibration verification to verify that the %D has been correctly calculated and reported.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☑ ☐ ☐ Review the raw data to verify that the concentrations reported on Form VII-PEST-1 and VII-PEST-2 were reported accurately	
☐ ☐ ☑ Review and recalculate 10% of the DDT and endrin breakdown data in the PEMs. Verify that the recalculated values agree within 10% of the laboratory values.	
☑ ☐ ☐ Review the raw data to verify that the chromatographic peaks of the single component pesticides and multicomponent analytes calibration standard mixtures are greater than 10% of full scale but less than 100% of full scale.	
☐ ☐ ☑ a.Review Standard Preparation Logs (if provided in the data package) to ensure that primary and secondary calibration verification standard concentrations are accurate and traceable to NIST standards.	
☐ ☐ ☑ Review and recalculate the calibration verification standard concentration for one single component target analyte and one multicomponent target analyte (if standards preparation documentation was provided in the data package). Verify that the calculated values agree within 10% of the laboratory reported values.	
Performance Evaluation	
☐ ☐ ☑ Examine the RCM chromatograms and raw data to verify that the resolution between two adjacent peaks for the required analytes is greater than or equal to 60.0% on both GC columns. Using equations found in Appendix F, recalculate the resolution between two RCM analytes to verify correct resolution calculations.	
☐ ☐ ☑ Review the PEM raw data from the initial calibrations to verify that the resolution between adjacent peaks is greater than or equal to 90.0% on both GC columns. Using equations in Appendix C, recalculate the resolution between two PEM analytes to verify correct resolution calculations.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☐	☐	☑	Review the Pesticide Standards Preparation Log entries to verify that the RCM solutions and PEM solutions contained the method required analytes at the required concentrations. The required concentrations are listed in Appendix F.	
☐	☐	☑	Review the raw data for samples analyzed after the last compliant PEM to assess the possibility of false positives and false negatives. Evaluate whether or not the sample chromatograms have any peaks which are close to any target pesticides retention time windows. These peaks could indicate qualitative inaccuracies.	
☐	☐	☐	Check the PEM raw data from the initial calibrations to verify that the correct absolute retention times for the PEM analytes in each PEM analysis have been transcribed correctly and are within the calculated retention time windows based on the mean RT from the three-point initial calibration using the values shown in Table App. F.III-3.	
☐	☐	☑	Check and recalculate 10% of the PEM percent difference data. Verify that the recalculated values agree within 10% of the laboratory reported values.	
☐	☐	☑	Check and recalculate 10% of the DDT and endrin breakdown data. Verify that the recalculated values agree within 10% of the laboratory values.	
Blanks				
☑	☐		Verify from the raw data that the extraction and/or analysis dates and times, sample IDs, file IDs, instrument IDs, etc. are accurately reported on the tabulated result forms.	
☐	☐	☑	Verify from the raw data that a GC instrument blank was analyzed after each sample with peaks that exceeded the calibration range.	
☐	☐	☑	Verify from the raw GPC data that a GPC instrument blank was analyzed after the GPC calibration and prior to sample analysis.	
☑	☐	☐	Review the raw data for each blank to confirm that retention time data have been correctly	

transcribed to the tabulated forms. Review the blank chromatograms and quantitation reports to ensure that contamination has been accurately reported. For additional guidance refer to Section XII, Target Analyte Identification, in Part III.

☑ ☐ ☐ Check 10% of the raw blank data to confirm that surrogate recovery data has been accurately calculated and transcribed to the tabulated result forms.

☐ ☐ ☑ Determine if instrument contamination is isolated to specific sample sequences or isolated to one column.

☑ ☐ ☐ Review the raw data (chromatograms, mass spectra confirmatory data and quantitation reports) to confirm the presence of target analytes in the blanks and to evaluate the presence of additional contaminants.

Surrogates

☑ ☐ ☐ Verify that the correct analytes were used as surrogate analytes and were added at the required concentration and frequency to all samples, QC samples, and blanks.

☐ ☐ ☑ If reported retention times of the surrogate analytes are not within the established retention time windows, check the raw data for accurate identification of GC peaks. Non-recovery of surrogates may be due to shifts in retention time or matrix interference.

☑ ☐ ☐ Ten percent of the surrogate analyte raw retention time data should be checked for calculation and/or transcription errors. If errors are detected in this ten percent, then an additional ten percent should be checked. If errors are found in the additional ten percent, then the retention times of all peaks in the data package should be checked to evaluate whether or not results were reported accurately.

☑ ☐ ☐ Check raw data (e.g., chromatograms and quantitation reports) to verify that surrogate recoveries were reported accurately on the Surrogate Recovery Forms (Form II PEST-1 and Form

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

II PEST-2). ☑ ☐ ☐ Ten percent of the surrogate analyte recovery data should be checked for calculation and/or transcription errors. If errors are detected in this ten percent, then an additional ten percent of the data should be checked. If errors are found in the additional ten percent, then all surrogate analyte recovery calculations and transcriptions in the data package should be checked.	
Matrix Spike/Matrix Spike Duplicate ☑ ☐ ☐ Check and recalculate the analytical concentrations and percent recovery for at least one spiked analyte per MS/MSD fraction. Verify that the recalculated value agrees within ± 10% of the reported value. ☑ ☐ ☐ Check and recalculate the RPD for at least one spiked analyte per MS/MSD fraction. Verify that the recalculated value agrees within ± 10% of the reported value.	
Field Duplicates ☑ ☐ ☐ Check and recalculate the analytical concentrations for at least one positive detect and one sample quantitation limit (for a diluted sample or soil sample) for each fraction, in every field duplicate sample, in accordance with Section Pest/PCB-XIII, C.	
MDL Study ☐ ☐ ☑ Check and recalculate the %RSDs and % recoveries for at least three analytes per MDL study. Verify that the recalculated values agree within ± 10% of the reported results. **LFB/LCS for SW-846** ☐ ☐ ☑ Check the standards preparation logs to verify that the stock standard used to prepare the LFB was from a source independent from the initial and continuing calibration standards. ☑ ☐ ☐ Check and recalculate the % recovery for at least one target analyte per LFB. Verify that the recalculated value agrees within ± 10% of the reported result.	Verify that the recalculated values agree within 10% of the laboratory reported values. Verify that the recalculated values agree within 10% of the laboratory reported values.
PE Samples/Accuracy Check ☐ ☐ ☑ Check and recalculate the percent recovery for at least one analyte per LCS fraction. Verify that the recalculated value agrees within ±10% of the reported result.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☐ ☐ ☑ Evaluate the "PES ANALYTES MISSED" to assess the potential for low bias and false negative sample results. ☐ ☐ ☑ Evaluate "PES CONTAMINANTS" in conjunction with blank data to asses the potential for high bias and false positive sample results. ☐ ☐ ☑ Evaluate "PES ANALYTES REPORTED" that were misquantified to assess the potential for high and/or low bias in sample data. ☐ ☐ ☑ Evaluate the surrogate analytes for the EPA PES. ☐ ☐ ☑ Evaluate the "PES ANALYTES MISSED" to assess the potential for low bias and false negative sample results. ☐ ☐ ☑ Evaluate "PES CONTAMINANTS" in conjunction with blank data to assess the potential for high bias and false positive sample results. ☐ ☐ ☑ Evaluate "PES ANALYTES REPORTED" that were misquantified to assess the potential for high and/or low bias in sample results.	Verify that the recalculated values agree within 10% of the laboratory reported values.
Target Compound Identification ☑ ☐ ☐ Verify that all analytes reported on Forms I and X display chromatographic peaks within the calculated retention time windows on two or more analytical columns. ☑ ☐ ☐ Verify that all analytes reported on Form Is as "not detected" show no chromatographic peaks within the calculated retention time windows on two or more analytical columns. Review the sample chromatograms to determine whether or not false negatives have been reported. ☑ ☐ ☐ While reviewing the raw data, the validator should check for analyte retention time shifts which could lead to the reporting of false positives and/or false negatives. After a validator has confirmed that all reported pesticides/PCBs meet analyte retention time criteria, one must next confirm that the chromatographic criteria are achieved in order to ensure positive analyte identification. ☑ ☐ ☐ Confirm that analyte chromatographic criteria are achieved for each positive detect. Failure to meet chromatographic criteria may indicate the presence of target and/or non-target interferences, or analytical system issues (i.e. column degradation) that prohibit the positive identification and accurate quantitation of target analytes.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☑ ☐ ☐ Evaluate peak shape.	
☑ ☐ ☐ Evaluate chromatographic resolution.	
☑ ☐ ☐ Evaluate chromatographic baseline.	
☑ ☐ ☐ For multicomponent analytes, in addition to the above retention time and chromatographic evaluations, the validator should evaluate the overall similarity of chromatographic patterns between the samples and the standards, while also evaluating the relative peak height ratios.	
☑ ☐ ☐ Ascertain if samples contain any combination of single component, multicomponent analytes and/or non-target analytes.	
☑ ☐ ☐ Determine if target and/or non-target interferences have caused a multicomponent analyte to be incorrectly identified as another multicomponent analyte.	
☑ ☐ ☐ Determine if multiple multicomponent analytes are present.	
☐ ☐ ☑ Review the PES data, refer to Section XI to assess the laboratory's ability to accurately identify and quantitate target analytes.	
☑ ☐ ☐ Review the sample chromatograms to determine if any analyses showed saturated peaks. If an instrument blank was not analyzed after a high concentration sample and the instrument is not proven to be free of contamination, then the possibility of sample carryover exists.	
☐ ☐ ☑ Review the continuing calibration analyses of the Standard Mixtures A and B and the Performance Evaluation Mixture to identify any potential analytical problems such as decreased column resolution or compromised instrument sensitivity that could affect the interpretation of sample chromatograms.	
☑ ☐ ☐ Review MS/MSD data to evaluate the effect of sample matrix on analyte identification and quantitation.	
☑ ☐ ☐ Review the sample chromatograms to verify that all chromatographic plotting criteria are achieved and that sample chromatograms are properly scaled to allow the validator to evaluate the presence/absence of pesticide/PCB peaks.	
☑ ☐ ☐ Review the GC/MS raw data. Compare the confirmatory sample analyte spectrum to the laboratory standard spectrum and verify the mass spectral match using the VOA/SV Target Analyte Identification criteria in Section XII	
Compound Quantitation and Reported Quant Limits	
☑ ☐ ☐ Verify that sample results reported by the laboratory were accurately calculated according to the method. Recalculate, from the raw data, the concentration for at least one positive detect and one sample quantitation limit (for a diluted sample or a soil sample) for a	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

pesticide and an Aroclor, in every field sample.

☑ ☐ ☐ Verify that the concentration for positive detects and sample quantitation limits have been adjusted to reflect sample dilutions, concentration procedures, cleanup methods, and dry weight factors that are not accounted for in the method.

☑ ☐ ☐ Compare the raw data including quantitation reports, chromatograms, and sample preparation logs to the reported positive sample results and quantitation limits on Form I PEST and Form X PEST-1 and -2.

☑ ☐ ☐ Verify that the correct standard CFs from the analysis of the calibration standards were used to quantitate sample results.

Cleanup

Gel Permeation Chromatography (GPC)

☐ ☐ ☑ Verify that the GPC system was calibrated initially in accordance with the method requirements and that peak shape and resolution criteria were met.

☐ ☐ ☑ Review the raw GPC calibration data to verify that peaks are symmetrical and resolution meets method QC acceptance criteria for target analytes and interferents in the GPC calibration solution.

☐ ☐ ☑ Check the raw GPC calibration data to verify that retention times for bis(2-ethylhexyl)phthalate and perylene in the GPC calibration solution did not vary more than ± 5% between calibrations.

☐ ☐ ☑ Check the collect and dump cycle times in the GPC calibration chromatogram and compare it with the samples collect and dump cycle times. Verify that retention times have not shifted between the calibration and the sample runs.

☐ ☐ ☑ Verify that a GPC instrument blank was analyzed after each GPC calibration and prior to sample analysis.

☐ ☐ ☑ Verify that there are no target analytes present at greater than or equal to the quantitation limit in the GPC instrument blank.

☐ ☐ ☑ Confirm from the raw data that the GPC calibration verification was performed at the method-required frequency.

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☐ ☐ ☑ Verify that a GPC calibration verification solution was analyzed in accordance with the method and that the correct target analytes, interferents, and concentrations were used.

☐ ☐ ☑ Compare the raw data to the reported results, if available, and verify that no calculation and/or transcription errors have occurred. If result forms are not available, then the validator must review the cleanup logs to confirm that method required cleanups were performed.

Silica Gel Cleanup

☐ ☐ ☑ Verify that surrogate analyte recoveries in the Florisil Cartridge Performance Check solution meet method QC acceptance criteria.

☐ ☐ ☑ Compare the raw data, if available, to the reported results and verify that no calculation and/or transcription errors have occurred. If result forms are not available, then the validator must review the cleanup logs to confirm that method required cleanups were performed.

Sulfur Cleanup

☐ ☐ ☑ Check the field sample GC chromatograms to determine whether or not there is a flat baseline. A rising baseline may indicate the presence of sulfur. Confirm that all pesticide/PCB peaks are adequately resolved and are symmetrical.

☐ ☐ ☑ Confirm from the raw data, laboratory bench sheets, or SDG Narrative, that a method-required cleanup technique was used to remove any sulfur present in the samples.

☐ ☐ ☑ Verify from the raw data that there are no target analytes greater than the quantitation limit present in the sulfur cleanup blank.

☐ ☐ ☑ Compare the raw data to the reported results, if available, and verify that no calculation and/or transcription errors have occurred.

Sulfuric Acid/Permanganate Cleanup

☐ ☐ ☑ Review the raw data, laboratory bench sheets, or SDG Narrative, to ascertain if sulfuric acid/permanganate cleanup was performed on all method-required sample

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

extracts, QC sample extracts, and method blank extracts.	
☐ ☐ ☑ Check the field sample GC chromatograms to determine whether or not there are interferences causing elevated baselines or overly complex chromatograms. Confirm that all PCB peaks are adequately resolved and are symmetrical.	
☐ ☐ ☑ Verify from the raw data that the associated QC samples and method blanks was also sulfuric acid/ permanganate cleaned.	
☐ ☐ ☑ Verify that the associated QC samples and method blanks met all method-specified QC acceptance criteria after sulfuric acid/permanganate cleanup (refer to the appropriate sections of Part III-Pest/PCB).	
☐ ☐ ☑ Compare the raw data to the reported results, if available, and verify that no calculation and/or transcription errors have occurred.	
System Performance	
☑ ☐ ☐ Evaluate all PES and other relevant QC data to determine if any analytical trends exist over the sample analysis period.	
☑ ☐ ☐ The validator should ascertain from the PES and other relevant QC data if there is a high or low quantitative bias for a particular analyte or group of analytes.	
☑ ☐ ☐ The validator should also determine from the PES and other relevant QC data if there is a potential for false negatives and/or false positives to be reported.	
☑ ☐ ☐ The validator should ascertain from the MS/MSD and surrogate spike analyte analyses if the sample matrix effects impact analyte recovery, thus indicating a method bias outside the control of the laboratory.	
☐ ☐ ☑ The validator should ascertain from the GPC calibration verifications and Florisil cartridge check analyses whether sample cleanup techniques impact analyte recovery.	
☑ ☐ ☐ Evaluate sample and QC sample chromatograms analyzed on all columns to determine if the column chromatography, peak shape, resolution, and baseline drift has either deteriorated or improved over the sample analysis period.	
☑ ☐ ☐ The validator should determine from the raw data if unacceptable chromatography, e.g., baseline drift, high background noise, loss of resolution, peak tailing, or peak splitting, may contribute to a high or a low quantitative bias for a particular analyte or group of analytes.	

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

- [x] [ ] [ ] The validator should also determine from the raw data if unacceptable chromatography, e.g., baseline drift, high background noise, loss of resolution, peak tailing, or peak splitting, may result in a potential for false negative and/or false positive identifications.
- [ ] [ ] [x] Compare all of the the daily standard calibrations and PEMs area counts throughout analytical sequence to ascertain if the instrument had consistent detector response over the sample analysis period.
- [x] [ ] [ ] Review the size of the solvent peak and the area counts of the surrogate analytes for each sample to ascertain if there is a change in detector response.
- [x] [ ] [ ] The validator should evaluate the MS/MSD RPDs in conjunction with field duplicate RPDs to identify any analytical trends, ascertain if sample matrices were homogeneous or heterogeneous, and determine if sampling error may have contributed to field imprecision.
- [ ] [ ] [x] Verify that samples were analyzed on the same instrument and under the same conditions as were used for the MDL Study analyses.
- [x] [ ] [ ] Review all daily LFBs, low level calibration standards, and PES data to evaluate sensitivity for each instrument to verify that the target analytes can be identified and accurately quantitated at the quantitation limit over the sample analysis period. These problems could potentially result in false negatives and low biased results.
- [ ] [ ] [x] Check the area counts of the daily PEM and calibration standards to monitor changes in instrument sensitivity.
- [x] [ ] [ ] Compare the area counts of surrogates in each sample throughout the analytical sequence to determine if any samples show unacceptably low counts.
- [x] [ ] [ ] Review the sample chromatograms for abrupt, discrete shifts in the chromatographic baseline which may indicate a change in the instrument's sensitivity or the zero setting. A baseline "decline" could indicate a decrease in sensitivity in the instrument or an increase in the instrument zero, possibly causing target analytes, at or near the detection limit, to be missed (false negatives). Additionally, a decline in the baseline may result in incorrect peak integration and produce inaccurate quantitation.

  A sudden baseline shift could indicate problems such as a change in the instrument zero, a leak, degradation of the column, or the formation of matrix degradation products. The validator should check for any abrupt shift in the zero setting which may cause a false positive to be reported. Additionally, a rise in the baseline may result in incorrect peak integration and subsequent misquantitation.

PESTICIDE/POLYCHLORINATED BIPHENYLS

REGION I VALIDATION CHECKLIST for OLIN CHEMICAL SUPERFUND SITE
Criteria and Qualifications: REGION I Organics Guideline (1996)

TIER III

☑	☐	☐	The validator may determine that instrument sensitivity is adequate but sample matrix effects may preclude the project required detection limits from being obtained while using the current analytical methods.	
☑	☐	☐	Review all blank and sample results to evaluate the possibility that sample contamination was introduced via cross-contamination from either a previously analyzed sample, or from field or laboratory general contamination.	
☑	☐	☐	Compare blank analysis on two different instruments to determine if the contamination is instrument related or the interferents are present in the blank as a result of sample processing activities.	

Validator's Signature: Bradley Bos

Date: 10/24/13

Reference:

U.S. Environmental Protection Agency (USEPA), 1996. "Test Methods for Evaluating Solid Waste"; Laboratory Manual Physical/Chemical Methods; Office of Solid Waste and Emergency Response; Washington, DC; SW-846; November 1986; Revision 4 -December 1996.

Method: 8082 - Polychlorinated Biphenyls (GC/ECD) (Continued)

Client Sample ID: OC-SS-506
Date Collected: 11/20/12 12:45
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-6
Matrix: Solid
Percent Solids: 91.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 08:31	1
PCB-1254	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 08:31	1
PCB-1260	**390**		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 08:31	1
PCB-1262	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 08:31	1
PCB-1268	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 08:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 150*	*11/24/12 07:25*	*11/25/12 08:31*	*1*
Tetrachloro-m-xylene	*65*		*30 - 150*	*11/24/12 07:25*	*11/25/12 08:31*	*1*
DCB Decachlorobiphenyl	*91*		*30 - 150*	*11/24/12 07:25*	*11/25/12 08:31*	*1*
DCB Decachlorobiphenyl	*85*		*30 - 150*	*11/24/12 07:25*	*11/25/12 08:31*	*1*

Client Sample ID: OC-SB-530-1.0-3.0
Date Collected: 11/20/12 13:25
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-7
Matrix: Solid
Percent Solids: 69.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1221	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1232	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1242	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1248	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1254	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1260	**10000**		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1262	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10
PCB-1268	ND		2700	270	ug/Kg	☼	11/24/12 07:25	11/25/12 10:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*30 - 150*	*11/24/12 07:25*	*11/25/12 10:29*	*10*
Tetrachloro-m-xylene	*83*		*30 - 150*	*11/24/12 07:25*	*11/25/12 10:29*	*10*
DCB Decachlorobiphenyl	*23* X		*30 - 150*	*11/24/12 07:25*	*11/25/12 10:29*	*10*
DCB Decachlorobiphenyl	*116*		*30 - 150*	*11/24/12 07:25*	*11/25/12 10:29*	*10*

OK
10X

Client Sample ID: OC-SB-531-1.0-3.0
Date Collected: 11/20/12 13:45
Date Received: 11/23/12 08:00

Lab Sample ID: 480-28969-8
Matrix: Solid
Percent Solids: 83.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1221	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1232	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1242	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1248	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1254	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1260	**300**		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1262	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1
PCB-1268	ND		210	21	ug/Kg	☼	11/24/12 07:25	11/25/12 09:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 150*	*11/24/12 07:25*	*11/25/12 09:30*	*1*
Tetrachloro-m-xylene	*59*		*30 - 150*	*11/24/12 07:25*	*11/25/12 09:30*	*1*
DCB Decachlorobiphenyl	*92*		*30 - 150*	*11/24/12 07:25*	*11/25/12 09:30*	*1*
DCB Decachlorobiphenyl	*86*		*30 - 150*	*11/24/12 07:25*	*11/25/12 09:30*	*1*

Surrogate Summary

Client: Olin Corporation
Project/Site: Olin Chemical Wilmington MA Superfund S

TestAmerica Job ID: 480-28969-1

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)	(30-150)	(30-150)
480-28969-1	OC-SS-501	93	78	104	93
480-28969-2	OC-SS-502	77	65	95	92
480-28969-3	OC-SS-503	78	67	102	92
480-28969-4	OC-SS-504	73	64	90	81
480-28969-5	OC-SS-505	63	55	78	70
480-28969-6	OC-SS-506	76	65	91	85
480-28969-7	OC-SB-530-1.0-3.0	89	83	23 X	116
480-28969-8	OC-SB-531-1.0-3.0	66	59	92	86
480-28969-9	OC-SS-509	74	66	90	81
480-28969-10	OC-SS-507	87	76	101	91
480-28969-11	OC-SS-508	75	69	85	76
LCS 480-92526/2-A	Lab Control Sample	85	67	100	94
LCSD 480-92526/3-A	Lab Control Sample Dup	87	70	104	94
MB 480-92526/1-A	Method Blank	74	64	90	88

10X DL

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8082 - Polychlorinated Biphenyls (GC/ECD)

Lab Sample ID: MB 480-92526/1-A
Matrix: Solid
Analysis Batch: 92606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1221	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1232	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1242	26.5	J	180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1248	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1254	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1260	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1262	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1
PCB-1268	ND		180	18	ug/Kg		11/24/12 07:25	11/25/12 06:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 150*	*11/24/12 07:25*	*11/25/12 06:04*	*1*
Tetrachloro-m-xylene	*64*		*30 - 150*	*11/24/12 07:25*	*11/25/12 06:04*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*11/24/12 07:25*	*11/25/12 06:04*	*1*
DCB Decachlorobiphenyl	*88*		*30 - 150*	*11/24/12 07:25*	*11/25/12 06:04*	*1*

Lab Sample ID: LCS 480-92526/2-A
Matrix: Solid
Analysis Batch: 92606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	947	693		ug/Kg		73	40 - 140
PCB-1260	947	676		ug/Kg		71	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*		*30 - 150*
Tetrachloro-m-xylene	*67*		*30 - 150*
DCB Decachlorobiphenyl	*100*		*30 - 150*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Lab Sample ID: LCSD 480-92526/3-A
Matrix: Solid
Analysis Batch: 92606

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92526

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	917	694		ug/Kg		76	40 - 140	0	30
PCB-1260	917	676		ug/Kg		74	40 - 140	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*87*		*30 - 150*
Tetrachloro-m-xylene	*70*		*30 - 150*
DCB Decachlorobiphenyl	*104*		*30 - 150*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Client: Olin Corporation

Job Number: 480-40373-1

Client Sample ID: **OC-SB-530 3.5/4.0-XXX**

Lab Sample ID: 480-40373-6
Client Matrix: Solid
% Moisture: 15.6

Date Sampled: 06/17/2013 1445
Date Received: 06/19/2013 0200

8082 Polychlorinated Biphenyls (GC/ECD)

Analysis Method:	8082	Analysis Batch:	480-124940	Instrument ID:	HP6890-7
Prep Method:	3546	Prep Batch:	480-124866	Initial Weight/Volume:	+5.57 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	06/20/2013 1226			Injection Volume:	1 uL
Prep Date:	06/19/2013 1516			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.011	0.11
PCB-1221		ND		0.011	0.11
PCB-1232		ND		0.011	0.11
PCB-1242		ND		0.011	0.11
PCB-1248		ND		0.011	0.11
PCB-1254		ND		0.011	0.11
PCB-1260		19	J	0.011	0.11
PCB-1262		ND		0.011	0.11
PCB-1268		ND		0.011	0.11

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	94		30 - 150
DCB Decachlorobiphenyl	89		30 - 150

Client: Olin Corporation

Job Number: 480-40373-1

Client Sample ID: **OC-SB-537-0.0/1.0-XXX**

Lab Sample ID: 480-40373-7
Client Matrix: Solid
% Moisture: 5.4

Date Sampled: 06/17/2013 1530
Date Received: 06/19/2013 0200

8082 Polychlorinated Biphenyls (GC/ECD)

Analysis Method:	8082	Analysis Batch:	480-124940	Instrument ID:	HP6890-7
Prep Method:	3546	Prep Batch:	480-124866	Initial Weight/Volume:	+5.63 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	06/20/2013 1242			Injection Volume:	1 uL
Prep Date:	06/19/2013 1516			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0094	0.094
PCB-1221		ND		0.0094	0.094
PCB-1232		ND		0.0094	0.094
PCB-1242		ND		0.0094	0.094
PCB-1248		ND		0.0094	0.094
PCB-1254		ND		0.0094	0.094
PCB-1260		65	J	0.0094	0.094
PCB-1262		ND		0.0094	0.094
PCB-1268		ND		0.0094	0.094

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	96		30 - 150
DCB Decachlorobiphenyl	90		30 - 150

Client: Olin Corporation

Job Number: 480-40373-1

Client Sample ID: **OC-DUP**

Lab Sample ID: 480-40373-10
Client Matrix: Solid
% Moisture: 4.2

Date Sampled: 06/17/2013 0000
Date Received: 06/19/2013 0200

8082 Polychlorinated Biphenyls (GC/ECD)

Analysis Method:	8082	Analysis Batch:	480-124940	Instrument ID:	HP6890-7
Prep Method:	3546	Prep Batch:	480-124866	Initial Weight/Volume:	+5.35 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	06/20/2013 1258			Injection Volume:	1 uL
Prep Date:	06/19/2013 1516			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.0098	0.098
PCB-1221		ND		0.0098	0.098
PCB-1232		ND		0.0098	0.098
PCB-1242		ND		0.0098	0.098
PCB-1248		ND		0.0098	0.098
PCB-1254		ND		0.0098	0.098
PCB-1260		33	J	0.0098	0.098
PCB-1262		ND		0.0098	0.098
PCB-1268		ND		0.0098	0.098

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	92		30 - 150
DCB Decachlorobiphenyl	87		30 - 150

LaForest, Brad B

From: Mazzolini, Chris T
Sent: Thursday, October 24, 2013 10:12 AM
To: LaForest, Brad B
Cc: Chapman, David L; Ricardi, Christian S.
Subject: RE: Olin - June 1023 PCBs

OC-SB-537 0.0/1.0

From: LaForest, Brad B
Sent: Thursday, October 24, 2013 10:10 AM
To: Mazzolini, Chris T
Cc: Chapman, David L; Ricardi, Christian S.
Subject: Olin - June 1023 PCBs

Hi Chris,
For the Olin_Wilmington June 2013 PCB Soils (TAL job 480-40373-1), can you please let me know what sample OC-DUP is associated with?
Thanks

Bradley B. LaForest, NRCC-EAC
Senior 1 Scientist-Environmental
AMEC Environment and Infrastructure
511 Congress Street, Suite 200
Portland, ME 04101
207-775-5401 (office)
207-828-3620 (direct)

Client: Olin Corporation

Job Number: 480-40373-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 480-124866

Method: 8082
Preparation: 3546

LCS Lab Sample ID:	LCS 480-124866/2-A	Units: ug/Kg	LCSD Lab Sample ID:	LCSD 480-124866/3-A	
Client Matrix:	Solid		Client Matrix:	Solid	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	06/20/2013 1051		Analysis Date:	06/20/2013 1107	
Prep Date:	06/19/2013 1516		Prep Date:	06/19/2013 1516	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
PCB-1016	899	883	876	750
PCB-1260	899	883	891	760

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-124866

Method: 8082
Preparation: 3546

MS Lab Sample ID:	480-40373-7	Analysis Batch:	480-124940	Instrument ID:	HP6890-7
Client Matrix:	Solid	Prep Batch:	480-124866	Lab File ID:	7_279_177.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+5.28 g
Analysis Date:	06/20/2013 1122			Final Weight/Volume:	10 mL
Prep Date:	06/19/2013 1516			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY
MSD Lab Sample ID:	480-40373-7	Analysis Batch:	480-124940	Instrument ID:	HP6890-7
Client Matrix:	Solid	Prep Batch:	480-124866	Lab File ID:	7_279_178.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+5.63 g
Analysis Date:	06/20/2013 1138			Final Weight/Volume:	10 mL
Prep Date:	06/19/2013 1516			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
PCB-1016	101	72	40 - 140	(39)	30	50 % OR	F
PCB-1260	102 ✓	91 ✓	40 - 140	17 ✓	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	96	90	30 - 150
DCB Decachlorobiphenyl	91	86	30 - 150

Client: Olin Corporation

Job Number: 480-40373-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-124866

Method: 8082
Preparation: 3546

MS Lab Sample ID:	480-40373-7	Units: ug/Kg	MSD Lab Sample ID:	480-40373-7	
Client Matrix:	Solid		Client Matrix:	Solid	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	06/20/2013 1122		Analysis Date:	06/20/2013 1138	
Prep Date:	06/19/2013 1516		Prep Date:	06/19/2013 1516	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
PCB-1016	ND	1000	939	1010	675	F
PCB-1260	65	1000	939	1090	917	

$\frac{1090 - 65}{1000} \times 100 = 102.5\%$

$\frac{916 - 65}{939} \times 100 = 90.6\%$

$\frac{1090 - 917}{1090 + 917/2} = \frac{173}{1003.5} \times 100 = 17.2\%\ RPD$

FORM VI
GC SEMI VOA INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-40373-1 Analy Batch No.: 116178

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/01/2013 12:59 Calibration End Date: 05/01/2013 14:35 Calibration ID: 13252

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 480-116178/3	7_273_112.D
Level 2	STD2 480-116178/4	7_273_113.D
Level 3	STD3 480-116178/5	7_273_114.D
Level 4	STD4 480-116178/6	7_273_115.D
Level 5	STD5 480-116178/7	7_273_116.D
Level 6	STD6 480-116178/8	7_273_117.D
Level 7	STD7 480-116178/9	7_273_118.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
PCB-1016 Peak 1	3001600 2708740	2537420 2501447	2664650 2546132	3115060	Ave		2725006.93				8.9		20.0			
PCB-1016 Peak 2	1118400 992658	973320 908104	1004490 925032	1160895	Ave		1011842.71				9.4		20.0			
PCB-1016 Peak 3	566750 554890	507300 502103	543180 529759	649215	Ave		550456.714				9.0		20.0			
PCB-1016 Peak 4	1237650 1152760	1073680 1062390	1119570 1076623	1331360	Ave		1150576.07				8.7		20.0			
PCB-1260 Peak 1	1503250 1419788	1252140 1345172	1330040 1405862	1590290	Ave		1406648.79				8.0		20.0			
PCB-1260 Peak 2	1053350 1064958	897160 1008761	975910 1065413	1195340	Ave		1037270.21				8.9		20.0			
PCB-1260 Peak 3	3628900 3648942	3140420 3498263	3366140 3671893	4072660	Ave		3575316.93				8.1		20.0			
PCB-1260 Peak 4	2505850 2205438	1997260 2098515	2067020 2210131	2484240	Ave		2224064.79				9.0		20.0			
Tetrachloro-m-xylene	39370000 35912800	33664400 33144400	35703800 33690190	41436100	Ave		36131670.0				8.7		20.0			
DCB Decachlorobiphenyl	34765000 26927440	27116400 24919200	26737400 25623580	30715900	Ave		28114988.6				12.0		20.0			

2505850 − 2224064.8)^2 = 7.940289894^{10}
1997260 " = 5.144041731^{10}
2067020 " = 2.466306921^{10}
2484240 " = 6.769113471^{10}
2205438 " = 34685767.2
2098515 " = 1.576752281^{10}
2210131 " = 1991507824
15568454/7 = 2224064.79 2.395061514 "/6 = $\sqrt{3.991769910}$ = 199794.1231 / 2224064.8 × 100 = 8.98% RSD

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_112.D		
Lims ID:	STD1	Client ID:	
Inject. Date:	01-May-2013 12:59:33	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	7
Sample ID:	Name: STD1		
Misc. Info.:	Study: 480-0021204-003 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	3
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:15	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 13:44:15

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	30504	0.000997			
2	2	1.706	1.706	0.000	39370	0.001090			
						RPD = 8.86			
6 PCB-1016									
1	1	2.764	2.763	0.002	22697	0.0206		100.0	
1	2	2.919	2.918	0.001	14287	0.0206	33.8- 93.8	62.9	
1	3	3.128	3.125	0.003	47967	0.0196	202.4- 262.4	211.3	
1	4	3.213	3.212	0.001	19035	0.0207		100.0	
			Average of Peak Amounts =			0.0203			
2	5	2.738	2.738	0.000	60032	0.0220		100.0	
2	6	2.853	2.853	0.000	22368	0.0221	6.3- 66.3	37.3	
2	7	2.991	2.989	0.002	11335	0.0206	0.0- 50.8	18.9	
2	8	3.028	3.027	0.001	24753	0.0215	12.3- 72.3	41.2	
			Average of Peak Amounts =			0.0216			
						RPD = 5.80			

0.02

19035/0.02 = 951750 (M)

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.143	5.142	0.001	27482	0.0201		100.0	
1	2	5.336	5.334	0.002	19287	0.0187	46.8- 106.8	70.2	
1	3	5.541	5.541	0.000	61243	0.0200	197.0- 257.0	222.8	
1	4	5.810	5.811	-0.001	25589	0.0200		100.0	
			Average of Peak Amounts =			0.0197			
2	5	4.905	4.905	0.000	30065	0.0214		100.0	
2	6	4.971	4.973	-0.001	21067	0.0203	45.8- 105.8	70.1	
2	7	5.040	5.042	-0.002	72578	0.0203	231.2- 291.2	241.4	
2	8	5.378	5.378	0.000	50117	0.0225	127.2- 187.2	166.7	
			Average of Peak Amounts =			0.0211			
						RPD = 7.02			
E 12 DCB Decachlorobiphenyl									
1	1	7.358	7.353	0.005	24905	0.001156			
2	2	6.508	6.509	-0.001	34765	0.001237			
						RPD = 6.72			

25589/0.02 = 1279450

50117/0.02 = 2505850

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_113.D
Lims ID: STD2 Client ID:
Inject. Date: 01-May-2013 13:15:23 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 6
Sample ID: Name: STD2
Misc. Info.: Study: 480-0021204-004 Channel B: I/F Serial#, CN10448015
Operator: tchrom Instrument ID: HP6890-7
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 116178 Lims Sample ID: 4
Sublist: chrom-HP7-PCBS*sub1
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

0.05

Method: \\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m
Last Update: 02-May-2013 13:10:17 Calib Date: 02-May-2013 08:05:09
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK031

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	68459	0.002238			
2	2	1.706	1.706	0.000	84161	0.002329			
						RPD = 4.00			
6 PCB-1016									
1	1	2.761	2.763	-0.001	51521	0.0467		100.0	
1	2	2.918	2.918	0.000	33756	0.0486	33.8- 93.8	65.5	
1	3	3.125	3.125	0.000	111295	0.0454	202.4- 262.4	216.0	
1	4	3.211	3.212	-0.001	42265	0.0460		100.0	
			Average of Peak Amounts =			0.0466			
2	5	2.738	2.738	0.000	126871	0.0466		100.0	
2	6	2.853	2.853	0.000	48666	0.0481	6.3- 66.3	38.4	
2	7	2.990	2.989	0.001	25365	0.0461	0.0- 50.8	20.0	
2	8	3.028	3.027	0.001	53684	0.0467	12.3- 72.3	42.3	
			Average of Peak Amounts =			0.0468			
						RPD = 0.43			
9 PCB-1260									
1	1	5.142	5.142	0.000	62795	0.0458		100.0	
1	2	5.334	5.334	0.000	46746	0.0453	46.8- 106.8	74.4	
1	3	5.539	5.541	-0.002	137561	0.0449	197.0- 257.0	219.1	
1	4	5.811	5.811	0.000	57691	0.0451		100.0	
			Average of Peak Amounts =			0.0453			
2	5	4.906	4.905	0.001	62607	0.0445		100.0	
2	6	4.973	4.973	0.001	44858	0.0432	45.8- 105.8	71.7	
2	7	5.042	5.042	0.000	157021	0.0439	231.2- 291.2	250.8	
2	8	5.378	5.378	0.000	99863	0.0449	127.2- 187.2	159.5	
			Average of Peak Amounts =			0.0441			
						RPD = 2.61			

99863/0.05 = 1997260

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_114.D		
Lims ID:	STD3	Client ID:	
Inject. Date:	01-May-2013 13:31:23	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	5
Sample ID:	Name: STD3		
Misc. Info.:	Study: 480-0021204-005 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	5
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:18	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 13:45:15

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.167	2.167	0.000	149887	0.004900			
2	2	1.706	1.706	0.000	178519	0.004941			
						RPD = 0.84			
6 PCB-1016									
1	1	2.763	2.763	0.000	111397	0.1009		100.0	
1	2	2.918	2.918	0.000	69770	0.1004	33.8- 93.8	62.6	
1	3	3.125	3.125	0.000	241589	0.0985	202.4- 262.4	216.9	
1	4	3.212	3.212	0.000	88602	0.0964		100.0	
			Average of Peak Amounts =			0.0990			
2	5	2.738	2.738	0.000	266465	0.0978		100.0	
2	6	2.853	2.853	0.000	100449	0.0993	6.3- 66.3	37.7	
2	7	2.989	2.989	0.000	54318	0.0987	0.0- 50.8	20.4	
2	8	3.027	3.027	0.000	111957	0.0973	12.3- 72.3	42.0	
			Average of Peak Amounts =			0.0983			
						RPD = 0.79			

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.142	5.142	0.000	134769	0.0984		100.0	
1	2	5.334	5.334	0.000	103066	0.0999	46.8- 106.8	76.5	
1	3	5.541	5.541	0.000	295716	0.0966	197.0- 257.0	219.4	
1	4	5.811	5.811	0.000	123515	0.0966		100.0	
			Average of Peak Amounts =			0.0979			
2	5	4.905	4.905	0.000	133004	0.0946		100.0	
2	6	4.973	4.973	0.000	97591	0.0941	45.8- 105.8	73.4	
2	7	5.042	5.042	0.000	336614	0.0941	231.2- 291.2	253.1	
2	8	5.378	5.378	0.000	206702 /0.1	0.0929	127.2- 187.2	155.4	
			Average of Peak Amounts =			0.0939			
						RPD = 4.12			
E 12 DCB Decachlorobiphenyl									
1	1	7.353	7.353	0.000	105256	0.004886			
2	2	6.509	6.509	0.000	133687	0.004755			
						RPD = 2.72			

206720

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_115.D		
Lims ID:	STD4	Client ID:	
Inject. Date:	01-May-2013 13:47:13	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	4
Sample ID:	Name: STD4		
Misc. Info.:	Study: 480-0021204-006 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	6
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:20	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 14:17:18

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	356569	0.0117			
2	2	1.706	1.706	0.000	414361	0.0115			
						RPD = 1.62			
6 PCB-1016									
1	1	2.763	2.763	0.000	257061	0.2328		100.0	
1	2	2.918	2.918	0.000	159176	0.2291	33.8- 93.8	61.9	
1	3	3.124	3.125	-0.001	573686	0.2338	202.4- 262.4	223.2	
1	4	3.212	3.212	0.000	212758	0.2315		100.0	
			Average of Peak Amounts =			0.2318			
2	5	2.738	2.738	0.000	623012	0.2286		100.0	
2	6	2.854	2.853	0.001	232179	0.2295	6.3- 66.3	37.3	
2	7	2.991	2.989	0.002	129843	0.2359	0.0- 50.8	20.8	
2	8	3.028	3.027	0.001	266272	0.2314	12.3- 72.3	42.7	
			Average of Peak Amounts =			0.2313			
						RPD = 0.20			

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.142	5.142	0.000	310598	0.2268		100.0	
1	2	5.333	5.334	-0.001	235418	0.2282	46.8- 106.8	75.8	
1	3	5.540	5.541	-0.001	690432	0.2256	197.0- 257.0	222.3	
1	4	5.812	5.811	0.001	290086	0.2269		100.0	
			Average of Peak Amounts =			0.2269			
2	5	4.907	4.905	0.002	318058	0.2261		100.0	
2	6	4.972	4.973	0.000	239068	0.2305	45.8- 105.8	75.2	
2	7	5.042	5.042	0.000	814532	0.2278	231.2- 291.2	256.1	
2	8	5.379	5.378	0.001	496848	0.2234	127.2- 187.2	156.2	
			Average of Peak Amounts =			0.2270			
						RPD = 0.03			
E 12 DCB Decachlorobiphenyl									
1	1	7.354	7.353	0.001	242128	0.0112			
2	2	6.508	6.509	-0.001	307159	0.0109			
						RPD = 2.84			

496848/0.2 = 2484240

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_116.D		
Lims ID:	STD5	Client ID:	
Inject. Date:	01-May-2013 14:03:09	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	3
Sample ID:	Name: STD5		
Misc. Info.:	Study: 021204-007 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	7
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		

0.5

Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:22	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 14:53:27

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	787473	0.0257			
2	2	1.707	1.706	0.001	897820	0.0248			
						RPD = 3.53			
6 PCB-1016									
1	1	2.764	2.763	0.002	556155	0.5037		100.0	
1	2	2.920	2.918	0.002	343719	0.4948	33.8- 93.8	61.8	
1	3	3.126	3.125	0.001	1264277	0.5153	202.4- 262.4	227.3	
1	4	3.212	3.212	0.000	464534	0.5054		100.0	
			Average of Peak Amounts =			0.5048			
2	5	2.739	2.738	0.001	1354370	0.4970		100.0	
2	6	2.853	2.853	0.000	496329	0.4905	6.3- 66.3	36.6	
2	7	2.991	2.989	0.002	277445	0.5040	0.0- 50.8	20.5	
2	8	3.028	3.027	0.001	576380	0.5009	12.3- 72.3	42.6	
			Average of Peak Amounts =			0.4981			
						RPD = 1.33			

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.143	5.142	0.000	693035	0.5060		100.0	
1	2	5.335	5.334	0.001	529806	0.5136	46.8- 106.8	76.4	
1	3	5.540	5.541	-0.001	1562359	0.5104	197.0- 257.0	225.4	
1	4	5.813	5.811	0.001	651630	0.5098		100.0	
			Average of Peak Amounts =			0.5099			
2	5	4.907	4.905	0.002	709894	0.5047		100.0	
2	6	4.973	4.973	0.001	532479	0.5133	45.8- 105.8	75.0	
2	7	5.042	5.042	0.000	1824471	0.5103	231.2- 291.2	257.0	
2	8	5.378	5.378	0.000	1102719	0.4958	127.2- 187.2	155.3	
			Average of Peak Amounts =			0.5060			
						RPD = 0.77			
E 12 DCB Decachlorobiphenyl									
1	1	7.354	7.353	0.001	524574	0.0244			
2	2	6.508	6.509	-0.001	673186	0.0239			
						RPD = 1.69			

1102719/05 = 2205438

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_117.D		
Lims ID:	STD6	Client ID:	
Inject. Date:	01-May-2013 14:19:04	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	2
Sample ID:	Name: STD6		
Misc. Info.:	Study: 480-0021204-008 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	8
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:24	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 14:50:19

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	1469291	0.0480			
2	2	1.707	1.706	0.001	1657220	0.0459			
						RPD = 4.61			
6 PCB-1016									
1	1	2.763	2.763	0.001	1026561	0.9297		100.0	
1	2	2.919	2.918	0.001	637991	0.9184	33.8- 93.8	62.1	
1	3	3.126	3.125	0.001	2353378	0.9592	202.4- 262.4	229.2	
1	4	3.213	3.212	0.001	871411	0.9481		100.0	
			Average of Peak Amounts =			0.9388			
2	5	2.739	2.738	0.001	2501447	0.9180		100.0	
2	6	2.854	2.853	0.001	908104	0.8975	6.3- 66.3	36.3	
2	7	2.991	2.989	0.002	502103	0.9122	0.0- 50.8	20.1	
2	8	3.028	3.027	0.001	1062390	0.9234	12.3- 72.3	42.5	
			Average of Peak Amounts =			0.9127			
						RPD = 2.82			

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.143	5.142	0.000	1304815	0.9527		100.0	
1	2	5.334	5.334	0.000	1005164	0.9745	46.8- 106.8	77.0	
1	3	5.539	5.541	-0.002	2979509	0.9734	197.0- 257.0	228.3	
1	4	5.813	5.811	0.002	1237397	0.9680		100.0	
			Average of Peak Amounts =			0.9671			
2	5	4.907	4.905	0.002	1345172	0.9563		100.0	
2	6	4.973	4.973	0.000	1008761	0.9725	45.8- 105.8	75.0	
2	7	5.043	5.042	0.000	3498263	0.9784	231.2- 291.2	260.1	
2	8	5.379	5.378	0.001	2098515	0.9435	127.2- 187.2	156.0	
			Average of Peak Amounts =			0.9627			
						RPD = 0.46			
E 12 DCB Decachlorobiphenyl									
1	1	7.355	7.353	0.002	962731	0.0447			
2	2	6.509	6.509	0.000	1245960	0.0443			
						RPD = 0.85			

2098515/1

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_118.D		
Lims ID:	STD7	Client ID:	
Inject. Date:	01-May-2013 14:35:02	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	1
Sample ID:	Name: STD7		
Misc. Info.:	Study: 480-0021204-009 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	116178	Lims Sample ID:	9
Sublist:	chrom-HP7-PCBS*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\HP7-PCBS.m		
Last Update:	02-May-2013 13:10:26	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK031		

First Level Reviewer: michalej Date: 01-May-2013 14:55:42

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.168	2.167	0.001	2973351	0.0972			
2	2	1.708	1.706	0.002	3369019	0.0932			
						RPD = 4.15			
6 PCB-1016									
1	1	2.764	2.763	0.002	2051741	1.86		100.0	
1	2	2.918	2.918	0.000	1308986	1.88	33.8- 93.8	63.8	
1	3	3.126	3.125	0.001	4768683	1.94	202.4- 262.4	232.4	
1	4	3.212	3.212	0.000	1773310	1.93		100.0	
			Average of Peak Amounts =			1.90			
2	5	2.740	2.738	0.002	5092263	1.87		100.0	
2	6	2.854	2.853	0.001	1850064	1.83	6.3- 66.3	36.3	
2	7	2.991	2.989	0.002	1059518	1.92	0.0- 50.8	20.8	
2	8	3.028	3.027	0.001	2153245	1.87	12.3- 72.3	42.3	
			Average of Peak Amounts =			1.87			
						RPD = 1.61			

Report Date: 02-May-2013 13:10:27 Chrom Revision: 2.0 01-Feb-2013 10:03:10
Data File: \\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_118.D

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.143	5.142	0.000	2731776	1.99		100.0	
1	2	5.335	5.334	0.001	2096784	2.03	46.8- 106.8	76.8	
1	3	5.541	5.541	0.000	6201247	2.03	197.0- 257.0	227.0	
1	4	5.813	5.811	0.001	2577437	2.02		100.0	
			Average of Peak Amounts =			2.02			
2	5	4.906	4.905	0.001	2811723	2.00		100.0	
2	6	4.974	4.973	0.002	2130825	2.05	45.8- 105.8	75.8	
2	7	5.043	5.042	0.001	7343787	2.05	231.2- 291.2	261.2	
2	8	5.379	5.378	0.001	4420261	1.99	127.2- 187.2	157.2	
			Average of Peak Amounts =			2.02			
						RPD = 0.31			
E 12 DCB Decachlorobiphenyl									
1	1	7.355	7.353	0.002	1925237	0.0894			
2	2	6.508	6.509	-0.001	2562358	0.0911			
						RPD = 1.95			

4420261/2 = 2210130.5

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_177.D		
Lims ID:	480-40373-A-7-A MS	Client ID:	OC-SB-537-0.0/1.0-XMS
Inject. Date:	20-Jun-2013 11:22:56	Dil. Factor:	1.0000
Sample Type:	MS		
Sample ID:	Name: 480-40373-A-7-A MS		
Misc. Info.:	Study: 480-0022772-018 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	18
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 13:42:25	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 13:42:24

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.174	2.173	0.002	1087080	0.0355			
2	2	1.710	1.709	0.001	694250	0.0192			
						RPD = 59.62			
6 PCB-1016									
1	1	2.765	2.766	-0.001	744647	0.6744		100.0	
1	2	2.918	2.918	0.000	420851	0.6058	33.8- 93.8	56.5	
1	3	3.126	3.124	0.002	1422666	0.5798	202.4- 262.4	191.1	
1	4	3.212	3.210	0.002	526647	0.5730		100.0	
			Average of Peak Amounts =			0.6082			
2	5	2.742	2.743	0.000	1330451	0.4882		100.0	
2	6	2.858	2.857	0.001	518912	0.5128	6.3- 66.3	39.0	
2	7	2.994	2.993	0.001	278582	0.5061	0.0- 50.8	20.9	
2	8	3.032	3.031	0.001	580949	0.5049	12.3- 72.3	43.7	
			Average of Peak Amounts =			0.5030			
						RPD = 18.94			
9 PCB-1260									
1	1	5.138	5.138	0.000	617950	0.4512		100.0	
1	2	5.332	5.331	0.001	545381	0.5287	46.8- 106.8	88.3	
1	3	5.536	5.536	0.000	1553895	0.5076	197.0- 257.0	251.5	
1	4	5.807	5.805	0.002	744575	0.5825		100.0	
			Average of Peak Amounts =			0.5175			
2	5	4.913	4.913	0.001	748020	0.5318		100.0	
2	6	4.981	4.980	0.001	601655	0.5800	45.8- 105.8	80.4	
2	7	5.049	5.048	0.001	1996566	0.5584	231.2- 291.2	266.9	
2	8	5.386	5.386	0.000	1106377	0.4975	127.2- 187.2	147.9	
			Average of Peak Amounts =			0.5419			
						RPD = 4.61			

$\frac{5.175}{4.995} = 1036$

$\frac{1040 - 1050}{1040} \times 100 = 3.98\%$

1106377 / 2224064.8 = 0.4975

$\frac{(0.5419)(10000)}{(5.28)(.946)} = \frac{5419}{4.995} = 1084.9$

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-40373-1

SDG No.:

Client Sample ID: OC-SB-537-0.0/1.0-XXX MSD Lab Sample ID: 480-40373-7 MSD

Instrument ID (1): Instrument ID (2): HP6890-7

Date Analyzed (1): Date Analyzed (2): 06/20/2013 11:38

GC Column (1): ID: GC Column (2): ZB-35 ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		
				FROM	TO	PEAK	MEAN	
PCB-1016	2	1	2.74	2.71	2.77	841	675	
		2	2.86	2.83	2.89	823		
		3	2.99	2.96	3.02	504		
		4	3.03	3.00	3.06	533		
PCB-1260	2	1	4.91	4.88	4.94	901	917	
		2	4.98	4.95	5.01	969		
		3	5.05	5.02	5.08	953		
		4	5.39	5.36	5.42	847		

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_178.D		
Lims ID:	480-40373-A-7-B MSD	Client ID:	OC-SB-537-0.0/1.0-MSD
Inject. Date:	20-Jun-2013 11:38:50	Dil. Factor:	1.0000
Sample Type:	MSD		
Sample ID:	Name: 480-40373-A-7-B MSD		
Misc. Info.:	Study: 480-0022772-019 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	19
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 13:42:38	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 13:42:38

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.001	1014347	0.0332			
2	2	1.710	1.709	0.001	648393	0.0179			
						RPD = 59.54			
6 PCB-1016									
1	1	2.764	2.766	-0.002	693151	0.6277		100.0	
1	2	2.918	2.918	0.000	392401	0.5648	33.8- 93.8	56.6	
1	3	3.125	3.124	0.001	1281404	0.5223	202.4- 262.4	184.9	
1	4	3.211	3.210	0.001	469010	0.5103		100.0	
			Average of Peak Amounts =			0.5563			
2	5	2.742	2.743	0.000	1220171	0.4478		100.0	
2	6	2.857	2.857	0.000	443320	0.4381	6.3- 66.3	36.3	
2	7	2.993	2.993	0.000	147680	0.2683	0.0- 50.8	12.1	
2	8	3.031	3.031	0.000	326775	0.2840	12.3- 72.3	26.8	
			Average of Peak Amounts =			0.3595			
						RPD = 42.96			
9 PCB-1260									
1	1	5.138	5.138	0.000	562403	0.4106		100.0	
1	2	5.331	5.331	0.000	501626	0.4863	46.8- 106.8	89.2	
1	3	5.535	5.536	-0.001	1423260	0.4650	197.0- 257.0	253.1	
1	4	5.807	5.805	0.002	680576	0.5324		100.0	
			Average of Peak Amounts =			0.4736			
2	5	4.913	4.913	0.001	674761	0.4797		100.0	
2	6	4.981	4.980	0.001	535016	0.5158	45.8- 105.8	79.3	
2	7	5.049	5.048	0.001	1813859	0.5073	231.2- 291.2	268.8	
2	8	5.386	5.386	0.000	1002359	0.4507	127.2- 187.2	148.6	
			Average of Peak Amounts =			0.4884			
						RPD = 3.08			

$\frac{890 - 920}{890} \times 100 = 3.480$

$\frac{4736 - 888}{531}$

$\frac{4884}{(563)/(1944)} = \frac{4884}{5.33} = 916$ ✓

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_179.D		
Lims ID:	480-40373-A-1-A	Client ID:	OC-SB-536-0.0/1.0-XXX
Inject. Date:	20-Jun-2013 11:54:49	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-1-A		
Misc. Info.:	Study: 480-0022772-020 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	20
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 12:31:02	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 12:31:02

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	-0.001	1082237	0.0354			
2	2	1.709	1.710	-0.001	727880	0.0201			
						RPD = 54.87			
9 PCB-1260									
1	1	5.138	5.139	-0.001	770343	0.5624		100.0	
1	2	5.330	5.332	-0.002	709568	0.6879	46.8- 106.8	92.1	
1	3	5.536	5.535	0.001	2393039	0.7818	197.0- 257.0	310.6	
1	4	5.806	5.807	-0.001	1259692	0.9854		100.0	
			Average of Peak Amounts =			0.7544			
2	5	4.913	4.913	0.001	989452	0.7034		100.0	
2	6	4.980	4.981	-0.001	814977	0.7857	45.8- 105.8	82.4	
2	7	5.048	5.049	-0.001	3017050	0.8439	231.2- 291.2	304.9	
2	8	5.385	5.386	-0.001	1616376	0.7268	127.2- 187.2	163.4	
			Average of Peak Amounts =			0.7649			
						RPD = 1.39			
E 12 DCB Decachlorobiphenyl									
1	1	7.342	7.343	-0.001	565401	0.0262			
2	2	6.517	6.519	-0.002	524513	0.0187			
						RPD = 33.81			

$\frac{7544}{(5.24)(.943)} = \frac{7544}{4.94} = 1530$

$\frac{7649}{4.94} = 1550$

%D ok

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-40373-1

SDG No.:

Client Sample ID: OC-SB-530 3.5/4.0-XXX | Lab Sample ID: 480-40373-6

Matrix: Solid | Lab File ID: 7_279_181.D

Analysis Method: 8082 | Date Collected: 06/17/2013 14:45

Extraction Method: 3546 | Date Extracted: 06/19/2013 15:16

Sample wt/vol: +5.57(g) | Date Analyzed: 06/20/2013 12:26

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 15.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 124940 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.11	0.011
11104-28-2	PCB-1221	ND		0.11	0.011
11141-16-5	PCB-1232	ND		0.11	0.011
53469-21-9	PCB-1242	ND		0.11	0.011
12672-29-6	PCB-1248	ND		0.11	0.011
11097-69-1	PCB-1254	ND		0.11	0.011
11096-82-5	PCB-1260	19	J	0.11	0.011
37324-23-5	PCB-1262	ND		0.11	0.011
11100-14-4	PCB-1268	ND		0.11	0.011

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	94		30-150
2051-24-3	DCB Decachlorobiphenyl	89		30-150

DC-PD

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_181.D		
Lims ID:	480-40373-A-6-A	Client ID:	OC-SB-530 3.5/4.0-XXX
Inject. Date:	20-Jun-2013 12:26:40	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-6-A		
Misc. Info.:	Study: 480-0022772-022 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	22
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 12:40:04	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 12:40:04

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	-0.001	1007127	0.0329			
2	2	1.709	1.710	-0.001	677416	0.0187			
						RPD = 54.86			
9 PCB-1260									
1	1	5.141	5.139	0.002	16654	0.0122		100.0	
1	2	5.333	5.332	0.000	21955	0.0213	46.8- 106.8	131.8	
1	3	5.536	5.535	0.001	27174	0.008877	197.0- 257.0	163.2	
1	4	5.806	5.807	-0.001	11404	0.008921		100.0	
			Average of Peak Amounts =			0.0128			
2	5	4.913	4.913	0.001	11393	0.008099		100.0	
2	6	4.979	4.981	-0.002	9764	0.009413	45.8- 105.8	85.7	
2	7	5.048	5.049	-0.001	33755	0.009441	231.2- 291.2	296.3	
2	8	5.385	5.386	-0.001	17748	0.007980	127.2- 187.2	155.8	
			Average of Peak Amounts =			0.008733			
						RPD = 37.85			
E 12 DCB Decachlorobiphenyl									
1	1	7.344	7.343	0.001	550292	0.0255			
2	2	6.518	6.519	-0.001	500704	0.0178			
						RPD = 35.69			

$\frac{128}{(5.57)(.844)} = \frac{128}{4.7} = 27.2$

$\frac{87.33}{4.7} = 19$

$\frac{27-19}{19} \times 100 = 42.1\%$

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-40373-1

SDG No.:

Client Sample ID: OC-SB-537-0.0/1.0-XXX | Lab Sample ID: 480-40373-7

Matrix: Solid | Lab File ID: 7_279_182.D

Analysis Method: 8082 | Date Collected: 06/17/2013 15:30

Extraction Method: 3546 | Date Extracted: 06/19/2013 15:16

Sample wt/vol: +5.63(g) | Date Analyzed: 06/20/2013 12:42

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 5.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 124940 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.094	0.0094
11104-28-2	PCB-1221	ND		0.094	0.0094
11141-16-5	PCB-1232	ND		0.094	0.0094
53469-21-9	PCB-1242	ND		0.094	0.0094
12672-29-6	PCB-1248	ND		0.094	0.0094
11097-69-1	PCB-1254	ND		0.094	0.0094
11096-82-5	PCB-1260	65	J	0.094	0.0094
37324-23-5	PCB-1262	ND		0.094	0.0094
11100-14-4	PCB-1268	ND		0.094	0.0094

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	96		30-150
2051-24-3	DCB Decachlorobiphenyl	90		30-150

$\frac{65-33}{65+33/2} = \frac{32}{49}$ 65% RPD

FD

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_182.D		
Lims ID:	480-40373-A-7-C	Client ID:	OC-SB-537-0.0/1.0-XXX
Inject. Date:	20-Jun-2013 12:42:34	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-7-C		
Misc. Info.:	Study: 480-0022772-023 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	23
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 13:10:20	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 13:10:20

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	1036422	0.0339			
2	2	1.709	1.710	-0.001	691149	0.0191			
						RPD = 55.66			
9 PCB-1260									
1	1	5.138	5.139	-0.001	48623	0.0355		100.0	
1	2	5.331	5.332	-0.001	44443	0.0431	46.8- 106.8	91.4	
1	3	5.537	5.535	0.002	120409	0.0393	197.0- 257.0	247.6	
1	4	5.806	5.807	-0.001	65729	0.0514		100.0	
			Average of Peak Amounts =			0.0423			
2	5	4.913	4.913	0.001	47619	0.0339		100.0	
2	6	4.981	4.981	0.000	32951	0.0318	45.8- 105.8	69.2	
2	7	5.049	5.049	0.000	137991	0.0386	231.2- 291.2	289.8	
2	8	5.386	5.386	0.000	76152	0.0342	127.2- 187.2	159.9	
			Average of Peak Amounts =			0.0346			
						RPD = 20.07			
E 12 DCB Decachlorobiphenyl									
1	1	7.342	7.343	-0.001	562261	0.0261			
2	2	6.518	6.519	-0.001	505615	0.0180			
						RPD = 36.83			

$\frac{423}{(5.63)(.946)} = \frac{423}{5.33}$ 79.4

$\frac{346}{5.33} = 64.9$

$\frac{79.4 - 64.9}{64.9} \times 100 = 22\%$

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-40373-1

SDG No.:

Client Sample ID: OC-DUP | Lab Sample ID: 480-40373-10

Matrix: Solid | Lab File ID: 7_279_183.D

Analysis Method: 8082 | Date Collected: 06/17/2013 00:00

Extraction Method: 3546 | Date Extracted: 06/19/2013 15:16

Sample wt/vol: +5.35(g) | Date Analyzed: 06/20/2013 12:58

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 4.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 124940 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.098	0.0098
11104-28-2	PCB-1221	ND		0.098	0.0098
11141-16-5	PCB-1232	ND		0.098	0.0098
53469-21-9	PCB-1242	ND		0.098	0.0098
12672-29-6	PCB-1248	ND		0.098	0.0098
11097-69-1	PCB-1254	ND		0.098	0.0098
11096-82-5	PCB-1260	33	J	0.098	0.0098
37324-23-5	PCB-1262	ND		0.098	0.0098
11100-14-4	PCB-1268	ND		0.098	0.0098

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	92		30-150
2051-24-3	DCB Decachlorobiphenyl	87		30-150

OC-PD
FD

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\7_279_183.D		
Lims ID:	480-40373-A-10-A	Client ID:	OC-DUP
Inject. Date:	20-Jun-2013 12:58:37	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-10-A		
Misc. Info.:	Study: 480-0022772-024 Channel B: I/F Serial#, CN10448015		
Operator:	tchrom	Instrument ID:	HP6890-7
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	124940	Lims Sample ID:	24
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP6890-07\20130620-22772.b\HP7-PCBS.m		
Last Update:	20-Jun-2013 13:28:25	Calib Date:	02-May-2013 08:05:09
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP6890-07\20130501-21204.b\7_273_140.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK010		

First Level Reviewer: michalej Date: 20-Jun-2013 13:10:32

Det	Sig	RT	EXP RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	990621	0.0324			
2	2	1.708	1.709	-0.001	662652	0.0183			
						RPD = 55.37			
9 PCB-1260									
1	1	5.138	5.138	0.000	25306	0.0185		100.0	
1	2	5.332	5.331	0.001	26984	0.0262	46.8- 106.8	106.6	
1	3	5.537	5.536	0.001	55982	0.0183	197.0- 257.0	221.2	
1	4	5.808	5.805	0.003	27098	0.0212		100.0	
			Average of Peak Amounts =			0.0210			
2	5	4.913	4.913	0.001	22135	0.0157		100.0	
2	6	4.981	4.980	0.001	16485	0.0159	45.8- 105.8	74.5	
2	7	5.048	5.048	0.000	67323	0.0188	231.2- 291.2	304.1	
2	8	5.387	5.386	0.001	36677	0.0165	127.2- 187.2	165.7	
			Average of Peak Amounts =			0.0167			
						RPD = 22.74			
E 12 DCB Decachlorobiphenyl									
1	1	7.343	7.344	-0.001	540089	0.0251			
2	2	6.518	6.519	-0.001	489710	0.0174			
						RPD = 36.03			

$\frac{210}{(5.35)(.958)} = \frac{210}{5.13}$ 40.9

DC-PD

$\frac{167}{5.13} = 32.6$

%D

$\frac{40.9 - 32.6}{32.6} \times 100 = 25.5$

Client: Olin Corporation

Job Number: 480-40373-2

Method Blank - Batch: 480-126087

Method: 8082
Preparation: 3546

Lab Sample ID:	MB 480-126087/1-A	Analysis Batch:	480-126219	Instrument ID:	HP5890-12
Client Matrix:	Solid	Prep Batch:	480-126087	Lab File ID:	12_238_150.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+5.25 g
Analysis Date:	06/27/2013 0341	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	06/26/2013 1430			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
PCB-1016	ND		0.0095	0.095
PCB-1221	ND		0.0095	0.095
PCB-1232	ND		0.0095	0.095
PCB-1242	ND		0.0095	0.095
PCB-1248	ND		0.0095	0.095
PCB-1254	ND		0.0095	0.095
PCB-1260	ND		0.0095	0.095
PCB-1262	ND		0.0095	0.095
PCB-1268	ND		0.0095	0.095

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	101	30 - 150
DCB Decachlorobiphenyl	102	30 - 150

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 480-126087

Method: 8082
Preparation: 3546

LCS Lab Sample ID:	LCS 480-126087/2-A	Analysis Batch:	480-126219	Instrument ID:	HP5890-12
Client Matrix:	Solid	Prep Batch:	480-126087	Lab File ID:	12_238_151.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+5.08 g
Analysis Date:	06/27/2013 0355	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	06/26/2013 1430			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

LCSD Lab Sample ID:	LCSD 480-126087/3-A	Analysis Batch:	480-126219	Instrument ID:	HP5890-12
Client Matrix:	Solid	Prep Batch:	480-126087	Lab File ID:	12_238_152.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+5.28 g
Analysis Date:	06/27/2013 0410	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	06/26/2013 1430			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
PCB-1016	76	87	40 - 140	9	30		
PCB-1260	84	81	40 - 140	7	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	84	77	30 - 150
DCB Decachlorobiphenyl	98	93	30 - 150

Client: Olin Corporation

Job Number: 480-40373-2

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 480-126087

Method: 8082
Preparation: 3546

LCS Lab Sample ID:	LCS 480-126087/2-A	Units:	ug/Kg	LCSD Lab Sample ID:	LCSD 480-126087/3-A
Client Matrix:	Solid			Client Matrix:	Solid
Dilution:	1.0			Dilution:	1.0
Analysis Date:	06/27/2013 0355			Analysis Date:	06/27/2013 0410
Prep Date:	06/26/2013 1430			Prep Date:	06/26/2013 1430
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
PCB-1016	984	947	752	822
PCB-1260	984	947	825	767

$\frac{825}{984} \times 100 = 83.8\%$

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-40373-2

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 480-126087/3-A

Instrument ID (1): HP5890-12 Instrument ID (2):

Date Analyzed (1): 06/27/2013 04:10 Date Analyzed (2):

GC Column (1): ZB-5 ID: 0.53(mm) GC Column (2): ID:

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		
				FROM	TO	PEAK	MEAN	
PCB-1016	1	1	2.86	2.82	2.88	803	822	
		2	3.06	3.03	3.09	786		
		3	3.14	3.11	3.17	846		
		4	3.60	3.57	3.63	854		
PCB-1260	1	1	5.04	5.01	5.07	741	767	
		2	5.23	5.19	5.25	770		
		3	5.43	5.40	5.46	758		
		4	5.68	5.64	5.70	800		

$\frac{822-767}{822+767/2} \times 100 =$

$= \frac{55}{794.5} \times 100 = 6.9\%$ RPD

$\frac{822-767}{767} \times 100 = 7.2\%$

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-40373-2

SDG No.:

Client Sample ID: OC-SB-537-2.5/3.0-XXX | Lab Sample ID: 480-40373-8

Matrix: Solid | Lab File ID: 12_238_154.D

Analysis Method: 8082 | Date Collected: 06/17/2013 15:50

Extraction Method: 3546 | Date Extracted: 06/26/2013 14:30

Sample wt/vol: +5.29(g) | Date Analyzed: 06/27/2013 04:40

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 13.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 126219 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.11	0.011
11104-28-2	PCB-1221	ND		0.11	0.011
11141-16-5	PCB-1232	ND		0.11	0.011
53469-21-9	PCB-1242	ND		0.11	0.011
12672-29-6	PCB-1248	ND		0.11	0.011
11097-69-1	PCB-1254	ND		0.11	0.011
11096-82-5	PCB-1260	1800		0.11	0.011
37324-23-5	PCB-1262	ND		0.11	0.011
11100-14-4	PCB-1268	ND		0.11	0.011

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	70		30-150
2051-24-3	DCB Decachlorobiphenyl	90		30-150

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP5890-12\20130627-22992.b\12_238_154.D		
Lims ID:	480-40373-A-8-A	Client ID:	OC-SB-537-2.5/3.0-XXX
Inject. Date:	27-Jun-2013 04:40:15	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-8-A		
Misc. Info.:	Study: 480-0022992-008 Channel B: I/F Serial#, 9205571204		
Operator:	tchrom	Instrument ID:	HP5890-12
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	126219	Lims Sample ID:	8
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP5890-12\20130627-22992.b\hp12_pcb.m		
Last Update:	27-Jun-2013 06:48:05	Calib Date:	26-Mar-2013 01:16:16
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK034		

First Level Reviewer: michalej Date: 27-Jun-2013 06:48:05

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.121	2.119	0.002	164928	0.0139			
2	2	1.443	1.441	0.002	164182	0.0176			
						RPD = 23.19			
9 PCB-1260									M
1	1	5.037	5.035	0.002	413857	0.7327		100.0	M
1	2	5.225	5.224	0.001	239233	0.7555	25.0- 85.0	57.8	M
1	3	5.427	5.426	0.001	648198	0.8495	103.0- 163.0	156.6	M
1	4	5.673	5.673	0.000	343928	0.9803	31.9- 91.9	83.1	M
			Average of Peak Amounts =			0.8295			
2	5	4.437	4.437	0.000	288009	0.8768		100.0	
2	6	4.503	4.502	0.001	298180	0.9368	66.9- 126.9	103.5	
2	7	4.583	4.583	0.000	658568	0.8640	203.2- 263.2	228.7	
2	8	4.897	4.897	0.000	635427	0.8511	200.3- 260.3	220.6	
			Average of Peak Amounts =			0.8822			
						RPD = 6.16			
E 12 DCB Decachlorobiphenyl									
1	1	7.074	7.071	0.003	167885	0.0180			
2	2	5.804	5.803	0.001	160218	0.0164			
						RPD = 8.87			

QC Flag Legend

Review Flags
M - Manually Integrated

FORM VI
GC SEMI VOA INITIAL CALIBRATION DATA
EXTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-40373-2 Analy Batch No.: 109148

SDG No.:

Instrument ID: HP5890-12 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/25/2013 20:20 Calibration End Date: 03/25/2013 21:48 Calibration ID: 12914

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 480-109148/3	12_220_219.D
Level 2	STD2 480-109148/4	12_220_220.D
Level 3	STD3 480-109148/5	12_220_221.D
Level 4	STD4 480-109148/6	12_220_222.D
Level 5	STD5 480-109148/7	12_220_223.D
Level 6	STD6 480-109148/8	12_220_224.D
Level 7	STD7 480-109148/9	12_220_225.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
PCB-1016 Peak 1	328000 272828	301988 267341	294018 274983	300741	Ave		291414.226				7.3		20.0			
PCB-1016 Peak 2	861440 747336	811020 738689	784192 716400	822233	Ave		783044.262				6.6		20.0			
PCB-1016 Peak 3	319640 318753	359432 311441	343492 309796	349718	Ave		330324.476				6.1		20.0			
PCB-1016 Peak 4	255240 278802	291308 278206	298274 276985	309664	Ave		284068.393				6.2		20.0			
PCB-1260 Peak 1	539680 547041	597308 547848	575514 529223	617381	Ave		564856.393				5.8		20.0			
PCB-1260 Peak 2	340000 302013	324820 302061	317762 290876	339086	Ave		316659.631				6.1		20.0			
PCB-1260 Peak 3	858200 723038	779844 730866	738978 704089	806229	Ave		763034.750				7.2		20.0			
PCB-1260 Peak 4	386280 337731	351500 339755	339508 327459	373523	Ave		350822.095				6.1		20.0			
Tetrachloro-m-xylene	13381533	10379400 11032725	11122900 12321220	12882640	Ave		11853403.1				10.0		20.0			
DCB Decachlorobiphenyl	10714467	8295000 8589325	8996000 8216700	11284880	Ave		9349395.28				14.0		20.0			

539680 − 564856)² = 633830976
597308 = 1053132304
575514 = 1135929641
617381 = 2758875625
547041 = 317374225
547848 = 289272004
529223 = 1268998129

3953995/7 = 564856.4 6435076287/6 = √1072512715 = 32749/564856 × 100 = 5.8%RSD

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
GC SEMI VOA INITIAL CALIBRATION DATA
EXTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-40373-2 Analy Batch No.: 109148

SDG No.:

Instrument ID: HP5890-12 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/25/2013 20:20 Calibration End Date: 03/25/2013 21:48 Calibration ID: 12914

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 480-109148/3	12_220_219.D
Level 2	STD2 480-109148/4	12_220_220.D
Level 3	STD3 480-109148/5	12_220_221.D
Level 4	STD4 480-109148/6	12_220_222.D
Level 5	STD5 480-109148/7	12_220_223.D
Level 6	STD6 480-109148/8	12_220_224.D
Level 7	STD7 480-109148/9	12_220_225.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1016 Peak 1	Ave	8200 401012	75497 549966	147009	240593	272828	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1016 Peak 2	Ave	21536 1108034	202755 1432800	392096	657786	747336	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1016 Peak 3	Ave	7991 467162	89858 619591	171746	279774	318753	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1016 Peak 4	Ave	6381 417309	72827 553970	149137	247731	278802	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1260 Peak 1	Ave	13492 821772	149327 1058445	287757	493905	547041	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1260 Peak 2	Ave	8500 453091	81205 581751	158881	271269	302013	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1260 Peak 3	Ave	21455 1096299	194961 1408177	369489	644983	723038	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
PCB-1260 Peak 4	Ave	9657 509632	87875 654917	169754	298818	337731	0.0250 1.50	0.250 2.00	0.500	0.800	1.00
Tetrachloro-m-xylene	Ave	441309	51897 616061	111229	322066	401446	0.0400	0.00500 0.0500	0.0100	0.0250	0.0300
DCB Decachlorobiphenyl	Ave	343573	41475 410835	89960	282122	321434	0.0400	0.00500 0.0500	0.0100	0.0250	0.0300

Curve Type Legend:
Ave = Average

Report Date: 26-Mar-2013 08:13:08 Chrom Revision: 2.0 01-Feb-2013 10:03:10

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_219.D
Lims ID: STD1 Client ID:
Inject. Date: 25-Mar-2013 20:20:14 Dil. Factor: 1.0000 0.025
Sample Type: IC Calib Level: 7
Sample ID:
Misc. Info.:
Operator: tchrom Instrument ID: HP5890-12
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 109148 Lims Sample ID: 3
Sublist: chrom-hp12_pcb*sub1
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

Method: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m
Last Update: 26-Mar-2013 08:13:07 Calib Date: 26-Mar-2013 01:16:16
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK005

First Level Reviewer: michalej Date: 26-Mar-2013 05:15:48

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
6 PCB-1016									
1	1	2.927	2.927	0.000	8200	0.0281		100.0	
1	2	3.134	3.133	0.001	21536	0.0275	230.5- 290.5	262.6	
1	3	3.222	3.220	0.002	7991	0.0242	82.7- 142.7	97.5	
1	4	3.675	3.674	0.001	6381	0.0225	70.7- 130.7	77.8	
			Average of Peak Amounts =			0.0256			
2	5	2.489	2.487	0.002	18935	0.0299		100.0	
2	6	2.597	2.595	0.002	7208	0.0263	13.4- 73.4	38.1	
2	7	2.684	2.683	0.001	3375	0.0211	0.0- 57.1	17.8	
2	8	2.959	2.958	0.001	9225	0.0289	19.1- 79.1	48.7	
			Average of Peak Amounts =			0.0265			
						RPD = 3.74			
9 PCB-1260									M
1	1	5.079	5.077	0.002	13492	0.0239		100.0	M
1	2	5.262	5.259	0.003	8500	0.0268	25.0- 85.0	63.0	M
1	3	5.459	5.455	0.004	21455	0.0281	103.0- 163.0	159.0	
1	4	5.701	5.699	0.002	9657	0.0275	31.9- 91.9	71.6	
			Average of Peak Amounts =			0.0266			
2	5	4.567	4.564	0.003	9006	0.0274		100.0	
2	6	4.634	4.632	0.002	9360	0.0294	66.9- 126.9	103.9	M
2	7	4.707	4.704	0.003	22824	0.0299	203.2- 263.2	253.4	M
2	8	5.014	5.011	0.003	21359	0.0286	200.3- 260.3	237.2	
			Average of Peak Amounts =			0.0288			
						RPD = 8.12			

(13492)(0.025) = 539680

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_220.D		
Lims ID:	STD2	Client ID:	
Inject. Date:	25-Mar-2013 20:35:05	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	6
Sample ID:			
Misc. Info.:			
Operator:	tchrom	Instrument ID:	HP5890-12
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	109148	Lims Sample ID:	4
Sublist:	chrom-hp12_pcb*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m		
Last Update:	26-Mar-2013 08:13:09	Calib Date:	26-Mar-2013 01:16:16
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK005		

First Level Reviewer: michalej Date: 26-Mar-2013 05:23:08

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	51897	0.004378			
2	2	1.517	1.516	0.001	42441	0.004540			
						RPD = 3.63			
6 PCB-1016									
1	1	2.928	2.927	0.001	75497	0.2591		100.0	
1	2	3.134	3.133	0.001	202755	0.2589	230.5- 290.5	268.6	
1	3	3.221	3.220	0.001	89858	0.2720	82.7- 142.7	119.0	
1	4	3.675	3.674	0.001	72827	0.2564	70.7- 130.7	96.5	
			Average of Peak Amounts =			0.2616			
2	5	2.489	2.487	0.002	168259	0.2654		100.0	
2	6	2.597	2.595	0.002	75098	0.2741	13.4- 73.4	44.6	
2	7	2.683	2.683	0.000	43171	0.2701	0.0- 57.1	25.7	
2	8	2.959	2.958	0.001	86095	0.2698	19.1- 79.1	51.2	
			Average of Peak Amounts =			0.2698			
						RPD = 3.09			

Report Date: 26-Mar-2013 08:13:10 Chrom Revision: 2.0 01-Feb-2013 10:03:10

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_220.D

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.079	5.077	0.002	149327	0.2644		100.0	
1	2	5.262	5.259	0.003	81205	0.2564	25.0- 85.0	54.4	
1	3	5.457	5.455	0.002	194961	0.2555	103.0- 163.0	130.6	
1	4	5.701	5.699	0.002	87875	0.2505	31.9- 91.9	58.8	
			Average of Peak Amounts =			0.2567			
2	5	4.567	4.564	0.003	87166	0.2654		100.0	
2	6	4.634	4.632	0.002	81398	0.2557	66.9- 126.9	93.4	
2	7	4.707	4.704	0.003	194544	0.2552	203.2- 263.2	223.2	
2	8	5.014	5.011	0.003	195407	0.2617	200.3- 260.3	224.2	
			Average of Peak Amounts =			0.2595			
						RPD = 1.09			
E 12 DCB Decachlorobiphenyl									
1	1	7.083	7.082	0.001	41475	0.004436			
2	2	5.919	5.915	0.004	44962	0.004611			
						RPD = 3.87			

149327/.25 = 597308

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_221.D
Lims ID: STD3 Client ID:
Inject. Date: 25-Mar-2013 20:49:49 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 5
Sample ID:
Misc. Info.:
Operator: tchrom Instrument ID: HP5890-12
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 109148 Lims Sample ID: 5
Sublist: chrom-hp12_pcb*sub1
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

Method: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m
Last Update: 26-Mar-2013 08:13:11 Calib Date: 26-Mar-2013 01:16:16
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK005

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	111229	0.009384			
2	2	1.517	1.516	0.001	87248	0.009334			
						RPD = 0.54			
6 PCB-1016									
1	1	2.927	2.927	0.000	147009	0.5045		100.0	
1	2	3.133	3.133	0.000	392096	0.5007	230.5- 290.5	266.7	
1	3	3.220	3.220	0.000	171746	0.5199	82.7- 142.7	116.8	
1	4	3.674	3.674	0.000	149137	0.5250	70.7- 130.7	101.4	
			Average of Peak Amounts =			0.5125			
2	5	2.488	2.487	0.001	311015	0.4906		100.0	
2	6	2.596	2.595	0.001	138766	0.5064	13.4- 73.4	44.6	
2	7	2.683	2.683	0.000	83023	0.5193	0.0- 57.1	26.7	
2	8	2.959	2.958	0.001	161287	0.5054	19.1- 79.1	51.9	
			Average of Peak Amounts =			0.5054			
						RPD = 1.40			
9 PCB-1260									
1	1	5.077	5.077	0.000	287757	0.5094		100.0	
1	2	5.259	5.259	0.000	158881	0.5017	25.0- 85.0	55.2	
1	3	5.455	5.455	0.000	369489	0.4842	103.0- 163.0	128.4	
1	4	5.699	5.699	0.000	169754	0.4839	31.9- 91.9	59.0	
			Average of Peak Amounts =			0.4948			
2	5	4.565	4.564	0.001	164810	0.5018		100.0	
2	6	4.632	4.632	0.000	156875	0.4929	66.9- 126.9	95.2	
2	7	4.705	4.704	0.001	373544	0.4901	203.2- 263.2	226.7	
2	8	5.012	5.011	0.001	371230	0.4973	200.3- 260.3	225.2	
			Average of Peak Amounts =			0.4955			
						RPD = 0.14			

8.5

287757/5 = 575514

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_222.D		
Lims ID:	STD4	Client ID:	
Inject. Date:	25-Mar-2013 21:04:35	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	4
Sample ID:			
Misc. Info.:			
Operator:	tchrom	Instrument ID:	HP5890-12
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	109148	Lims Sample ID:	6
Sublist:	chrom-hp12_pcb*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m		
Last Update:	26-Mar-2013 08:13:13	Calib Date:	26-Mar-2013 01:16:16
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK005		

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	322066	0.0272			
2	2	1.516	1.516	0.000	263003	0.0281			
						RPD = 3.49			
6 PCB-1016									
1	1	2.927	2.927	0.000	240593	0.8256		100.0	
1	2	3.134	3.133	0.001	657786	0.8400	230.5- 290.5	273.4	
1	3	3.220	3.220	0.000	279774	0.8470	82.7- 142.7	116.3	
1	4	3.675	3.674	0.001	247731	0.8721	70.7- 130.7	103.0	
			Average of Peak Amounts =			0.8462			
2	5	2.487	2.487	0.000	524368	0.8271		100.0	
2	6	2.595	2.595	0.000	234112	0.8543	13.4- 73.4	44.6	
2	7	2.683	2.683	0.000	141458	0.8849	0.0- 57.1	27.0	
2	8	2.958	2.958	0.000	267789	0.8392	19.1- 79.1	51.1	
			Average of Peak Amounts =			0.8514			
						RPD = 0.61			
9 PCB-1260									
1	1	5.077	5.077	0.000	493905	0.8744		100.0	
1	2	5.260	5.259	0.001	271269	0.8567	25.0- 85.0	54.9	
1	3	5.456	5.455	0.001	644983	0.8453	103.0- 163.0	130.6	
1	4	5.699	5.699	0.000	298818	0.8518	31.9- 91.9	60.5	
			Average of Peak Amounts =			0.8570			
2	5	4.566	4.564	0.002	277529	0.8449		100.0	
2	6	4.633	4.632	0.001	264094	0.8297	66.9- 126.9	95.2	
2	7	4.707	4.704	0.003	631518	0.8285	203.2- 263.2	227.6	
2	8	5.014	5.011	0.003	618385	0.8283	200.3- 260.3	222.8	
			Average of Peak Amounts =			0.8329			
						RPD = 2.86			

0.8

493905/8 = 61738.1

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_223.D
Lims ID: STD5 Client ID:
Inject. Date: 25-Mar-2013 21:19:20 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 3
Sample ID:
Misc. Info.:
Operator: tchrom Instrument ID: HP5890-12
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 109148 Lims Sample ID: 7
Sublist: chrom-hp12_pcb*sub1
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

Method: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m
Last Update: 26-Mar-2013 08:13:14 Calib Date: 26-Mar-2013 01:16:16
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK005

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	401446	0.0339			
2	2	1.517	1.516	0.001	329298	0.0352			
						RPD = 3.94			
6 PCB-1016									
1	1	2.928	2.927	0.001	272828	0.9362		100.0	
1	2	3.135	3.133	0.002	747336	0.9544	230.5- 290.5	273.9	
1	3	3.221	3.220	0.001	318753	0.9650	82.7- 142.7	116.8	
1	4	3.675	3.674	0.001	278802	0.9815	70.7- 130.7	102.2	
			Average of Peak Amounts =			0.9593			
2	5	2.488	2.487	0.001	595695	0.9396		100.0	
2	6	2.595	2.595	0.000	263930	0.9632	13.4- 73.4	44.3	
2	7	2.683	2.683	0.000	160930	1.01	0.0- 57.1	27.0	
2	8	2.958	2.958	0.000	300925	0.9430	19.1- 79.1	50.5	
			Average of Peak Amounts =			0.9631			
						RPD = 0.40			
9 PCB-1260									
1	1	5.078	5.077	0.001	547041	0.9685		100.0	
1	2	5.261	5.259	0.002	302013	0.9537	25.0- 85.0	55.2	
1	3	5.457	5.455	0.002	723038	0.9476	103.0- 163.0	132.2	
1	4	5.699	5.699	0.000	337731	0.9627	31.9- 91.9	61.7	
			Average of Peak Amounts =			0.9581			
2	5	4.566	4.564	0.002	313175	0.9535		100.0	
2	6	4.634	4.632	0.002	302183	0.9494	66.9- 126.9	96.5	
2	7	4.706	4.704	0.002	713211	0.9357	203.2- 263.2	227.7	
2	8	5.014	5.011	0.003	702241	0.9406	200.3- 260.3	224.2	
			Average of Peak Amounts =			0.9448			
						RPD = 1.40			

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_224.D
Lims ID: STD6 Client ID:
Inject. Date: 25-Mar-2013 21:34:10 Dil. Factor: 1.0000
Sample Type: IC Calib Level: 2
Sample ID:
Misc. Info.:
Operator: tchrom Instrument ID: HP5890-12
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 109148 Lims Sample ID: 8
Sublist: chrom-hp12_pcb*sub1
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

Method: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m
Last Update: 26-Mar-2013 08:13:17 Calib Date: 26-Mar-2013 01:16:16
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK005

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.174	2.173	0.001	441309	0.0372			
2	2	1.517	1.516	0.001	351153	0.0376			
						RPD = 0.90			
6 PCB-1016									
1	1	2.928	2.927	0.001	401012	1.38		100.0	
1	2	3.135	3.133	0.002	1108034	1.42	230.5- 290.5	276.3	
1	3	3.221	3.220	0.001	467162	1.41	82.7- 142.7	116.5	
1	4	3.676	3.674	0.002	417309	1.47	70.7- 130.7	104.1	
			Average of Peak Amounts =			1.42			
2	5	2.487	2.487	0.000	876964	1.38		100.0	
2	6	2.595	2.595	0.000	385549	1.41	13.4- 73.4	44.0	
2	7	2.683	2.683	0.000	238030	1.49	0.0- 57.1	27.1	
2	8	2.957	2.958	-0.001	438449	1.37	19.1- 79.1	50.0	
			Average of Peak Amounts =			1.41			
						RPD = 0.38			
9 PCB-1260									
1	1	5.078	5.077	0.001	821772	1.45		100.0	
1	2	5.261	5.259	0.002	453091	1.43	25.0- 85.0	55.1	
1	3	5.457	5.455	0.002	1096299	1.44	103.0- 163.0	133.4	
1	4	5.700	5.699	0.001	509632	1.45	31.9- 91.9	62.0	
			Average of Peak Amounts =			1.44			
2	5	4.565	4.564	0.001	463395	1.41		100.0	
2	6	4.633	4.632	0.001	449201	1.41	66.9- 126.9	96.9	
2	7	4.705	4.704	0.001	1071665	1.41	203.2- 263.2	231.3	
2	8	5.013	5.011	0.002	1050637	1.41	200.3- 260.3	226.7	
			Average of Peak Amounts =			1.41			
						RPD = 2.45			

821772/1.5 = 547848

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_225.D		
Lims ID:	STD7	Client ID:	
Inject. Date:	25-Mar-2013 21:48:56	Dil. Factor:	1.0000
Sample Type:	IC	Calib Level:	1
Sample ID:			
Misc. Info.:			
Operator:	tchrom	Instrument ID:	HP5890-12 2
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	109148	Lims Sample ID:	9
Sublist:	chrom-hp12_pcb*sub1		
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\hp12_pcb.m		
Last Update:	26-Mar-2013 08:13:19	Calib Date:	26-Mar-2013 01:16:16
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK005		

First Level Reviewer: michalej Date: 26-Mar-2013 05:17:04

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.173	2.173	0.000	616061	0.0520			
2	2	1.516	1.516	0.000	429882	0.0460			
						RPD = 12.22			
6 PCB-1016									
1	1	2.927	2.927	0.000	549966	1.89		100.0	
1	2	3.133	3.133	0.000	1432800	1.83	230.5- 290.5	260.5	
1	3	3.220	3.220	0.000	619591	1.88	82.7- 142.7	112.7	
1	4	3.674	3.674	0.000	553970	1.95	70.7- 130.7	100.7	
			Average of Peak Amounts =			1.89			
2	5	2.487	2.487	0.000	1099340	1.73		100.0	
2	6	2.595	2.595	0.000	476693	1.74	13.4- 73.4	43.4	
2	7	2.683	2.683	0.000	297724	1.86	0.0- 57.1	27.1	
2	8	2.958	2.958	0.000	539743	1.69	19.1- 79.1	49.1	
			Average of Peak Amounts =			1.76			
						RPD = 7.08			

Report Date: 26-Mar-2013 08:13:20 Chrom Revision: 2.0 01-Feb-2013 10:03:10

Data File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_225.D

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.077	5.077	0.000	1058445	1.87		100.0	
1	2	5.259	5.259	0.000	581751	1.84	25.0- 85.0	55.0	
1	3	5.455	5.455	0.000	1408177	1.85	103.0- 163.0	133.0	
1	4	5.699	5.699	0.000	654917	1.87	31.9- 91.9	61.9	
			Average of Peak Amounts =			1.86			
2	5	4.564	4.564	0.000	583355	1.78		100.0	
2	6	4.632	4.632	0.000	565138	1.78	66.9- 126.9	96.9	
2	7	4.704	4.704	0.000	1360379	1.78	203.2- 263.2	233.2	
2	8	5.011	5.011	0.000	1343605	1.80	200.3- 260.3	230.3	
			Average of Peak Amounts =			1.78			
						RPD = 3.95			
E 12 DCB Decachlorobiphenyl									
1	1	7.082	7.082	0.000	410835	0.0439			
2	2	5.915	5.915	0.000	419396	0.0430			
						RPD = 2.14			

1058445/2.0 =

529222.5

FORM VII
GC SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-40373-2

SDG No.:

Lab Sample ID: CCV 480-126219/2 Calibration Date: 06/27/2013 02:09

Instrument ID: HP5890-12 Calib Start Date: 03/25/2013 20:20

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 03/25/2013 21:48

Lab File ID: 12_238_148.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	291414	286498		0.492	0.500	-1.7	20.0
PCB-1016 Peak 2	Ave	783044	736590		0.470	0.500	-5.9	20.0
PCB-1016 Peak 3	Ave	330324	327850		0.496	0.500	-0.7	20.0
PCB-1016 Peak 4	Ave	284068	286924		0.505	0.500	1.0	20.0
PCB-1260 Peak 1	Ave	564856	561564		0.497	0.500	-0.6	20.0
PCB-1260 Peak 2	Ave	316660	302694		0.478	0.500	-4.4	20.0
PCB-1260 Peak 3	Ave	763035	703776		0.461	0.500	-7.8	20.0
PCB-1260 Peak 4	Ave	350822	308922		0.440	0.500	-11.9	20.0
Tetrachloro-m-xylene	Ave	11853403	10028833		0.0254	0.0300	-15.4	20.0
DCB Decachlorobiphenyl	Ave	9349395	8435467		0.0271	0.0300	-9.8	20.0

$\frac{564856 - 561564}{564856} \times 100 = 0.58$

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\Bufchrom\ChromData\HP5890-12\20130627-22992.b\12_238_148.D
Lims ID: ccv Client ID:
Inject. Date: 27-Jun-2013 02:09:12 Dil. Factor: 1.0000
Sample Type: CCV
Sample ID:
Misc. Info.: Study: 480-0022965-039 Channel B: I/F Serial#, 9205571204
Operator: tchrom Instrument ID: HP5890-12
Injection Vol: 1.0 ul ALS Bottle#: 0
Lims Batch ID: 126219 Lims Sample ID: 2
Sublist: chrom-hp12_pcb*sub21
Detector 1 : Ch-A-7A136
Detector 2 : Ch-B-7b136

Method: \\Bufchrom\ChromData\HP5890-12\20130627-22992.b\hp12_pcb.m
Last Update: 27-Jun-2013 06:48:27 Calib Date: 26-Mar-2013 01:16:16
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D
Limit Group: GC 8082 RCP_MCP ICAL
Integrator: Falcon
Column Type: Column Dia:
Process Host: XAWRK034

First Level Reviewer: michalej Date: 27-Jun-2013 06:48:27

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.122	2.122	0.000	300865	0.0254			
2	2	1.443	1.443	0.000	248095	0.0265			
						RPD = 4.46			
6 PCB-1016									
1	1	2.857	2.857	0.000	143249	0.4916		100.0	
1	2	3.060	3.060	0.000	368295	0.4703	230.5- 290.5	257.1	
1	3	3.145	3.145	0.000	163925	0.4963	82.7- 142.7	114.4	
1	4	3.602	3.602	0.000	143462	0.5050	70.7- 130.7	100.1	
			Average of Peak Amounts =			0.4908			
2	5	2.365	2.365	0.000	310160	0.4892		100.0	
2	6	2.469	2.469	0.000	142717	0.5208	13.4- 73.4	46.0	
2	7	2.553	2.553	0.000	86241	0.5395	0.0- 57.1	27.8	
2	8	2.913	2.913	0.000	127946	0.4009	19.1- 79.1	41.3	
			Average of Peak Amounts =			0.4876			
						RPD = 0.65			

Report Date: 27-Jun-2013 06:48:28 Chrom Revision: 2.0 01-Feb-2013 10:03:10

Data File: \\Bufchrom\ChromData\HP5890-12\20130627-22992.b\12_238_148.D

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
9 PCB-1260									
1	1	5.041	5.041	0.000	280782	0.4971		100.0	
1	2	5.228	5.228	0.000	151347	0.4779	25.0- 85.0	53.9	
1	3	5.431	5.431	0.000	351888	0.4612	103.0- 163.0	125.3	
1	4	5.678	5.678	0.000	154461	0.4403	31.9- 91.9	55.0	
			Average of Peak Amounts =			0.4691			
2	5	4.440	4.440	0.000	163516	0.4978		100.0	
2	6	4.505	4.505	0.000	160991	0.5058	66.9- 126.9	98.5	
2	7	4.585	4.585	0.000	350586	0.4600	203.2- 263.2	214.4	
2	8	4.900	4.900	0.000	356321	0.4773	200.3- 260.3	217.9	
			Average of Peak Amounts =			0.4852			
						RPD = 3.37			
E 12 DCB Decachlorobiphenyl									
1	1	7.080	7.080	0.000	253064	0.0271			
2	2	5.806	5.806	0.000	217717	0.0223			
						RPD = 19.19			

280782/.5 = 561564

Client: Olin Corporation

Job Number: 480-40373-3

Client Sample ID: **OC-SB-537-3.5/4.0-XXX**

Lab Sample ID: 480-40373-9
Client Matrix: Solid

% Moisture: 10.6

Date Sampled: 06/17/2013 1600
Date Received: 06/19/2013 0200

8082 Polychlorinated Biphenyls (GC/ECD)

Analysis Method:	8082	Analysis Batch:	480-126722	Instrument ID:	HP5890-12
Prep Method:	3546	Prep Batch:	480-126559	Initial Weight/Volume:	+5.14 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	06/29/2013 1449			Injection Volume:	1 uL
Prep Date:	06/28/2013 1121			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.011	0.11
PCB-1221		ND		0.011	0.11
PCB-1232		ND		0.011	0.11
PCB-1242		ND		0.011	0.11
PCB-1248		ND		0.011	0.11
PCB-1254		ND		0.011	0.11
PCB-1260		1500	J	0.011	0.11
PCB-1262		ND		0.011	0.11
PCB-1268		ND		0.011	0.11

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	76		30 - 150
DCB Decachlorobiphenyl	85		30 - 150

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo | Job No.: 480-40373-3

SDG No.:

Client Sample ID: OC-SB-537-3.5/4.0-XXX | Lab Sample ID: 480-40373-9

Matrix: Solid | Lab File ID: 12_238_347.D

Analysis Method: 8082 | Date Collected: 06/17/2013 16:00

Extraction Method: 3546 | Date Extracted: 06/28/2013 11:21

Sample wt/vol: +5.14(g) | Date Analyzed: 06/29/2013 14:49

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 10.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 126722 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.11	0.011
11104-28-2	PCB-1221	ND		0.11	0.011
11141-16-5	PCB-1232	ND		0.11	0.011
53469-21-9	PCB-1242	ND		0.11	0.011
12672-29-6	PCB-1248	ND		0.11	0.011
11097-69-1	PCB-1254	ND		0.11	0.011
11096-82-5	PCB-1260	1500	J	0.11	0.011
37324-23-5	PCB-1262	ND		0.11	0.011
11100-14-4	PCB-1268	ND		0.11	0.011

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	76		30-150
2051-24-3	DCB Decachlorobiphenyl	85		30-150

DC-PD

TestAmerica Buffalo
Target Compound Quantitation Report

Data File:	\\Bufchrom\ChromData\HP5890-12\20130629-23071.b\12_238_347.D		
Lims ID:	480-40373-A-9-A	Client ID:	OC-SB-537-3.5/4.0-XXX
Inject. Date:	29-Jun-2013 14:49:05	Dil. Factor:	1.0000
Sample Type:	Client		
Sample ID:	Name: 480-40373-A-9-A		
Misc. Info.:	Study: 480-0023071-030 Channel B: I/F Serial#, 9205571204		
Operator:	tchrom	Instrument ID:	HP5890-12
Injection Vol:	1.0 ul	ALS Bottle#:	0
Lims Batch ID:	126722	Lims Sample ID:	30
Detector 1 :	Ch-A-7A136		
Detector 2 :	Ch-B-7b136		
Method:	\\Bufchrom\ChromData\HP5890-12\20130629-23071.b\hp12_pcb.m		
Last Update:	01-Jul-2013 09:44:49	Calib Date:	26-Mar-2013 01:16:16
Quant Method:	External Standard	Quant By:	Initial Calibration
Last ICal File:	\\Bufchrom\ChromData\HP5890-12\20130326-19961.b\12_220_239.D		
Limit Group:	GC 8082 RCP_MCP ICAL		
Integrator:	Falcon		
Column Type:		Column Dia:	
Process Host:	XAWRK035		

First Level Reviewer: bescod Date: 01-Jul-2013 09:44:49

Det	Sig	RT	ADJ RT	DLT RT	Response	On-Col Amt ng/uL	Ratio Range	Ratio	Flags
$ 3 Tetrachloro-m-xylene									
1	1	2.113	2.112	0.001	137032	0.0116			
2	2	1.436	1.435	0.001	142890	0.0153			
						RPD = 27.75			
9 PCB-1260									
1	1	5.026	5.028	-0.002	212952	0.3770		100.0	
1	2	5.215	5.217	-0.002	125068	0.3950	25.0- 85.0	58.7	
1	3	5.417	5.419	-0.002	448917	0.5883	103.0- 163.0	210.8	
1	4	5.663	5.666	-0.003	251442	0.7167	31.9- 91.9	118.1	
			Average of Peak Amounts =			0.5193			
2	5	4.422	4.424	-0.002	230989	0.7032		100.0	
2	6	4.489	4.490	-0.001	235916	0.7412	66.9- 126.9	102.1	
2	7	4.569	4.571	-0.002	524120	0.6876	203.2- 263.2	226.9	
2	8	4.883	4.886	-0.003	507465	0.6797	200.3- 260.3	219.7	
			Average of Peak Amounts =			0.7030			
						RPD = 30.06			
E 12 DCB Decachlorobiphenyl									
1	1	7.059	7.061	-0.002	166857	0.0178			
2	2	5.789	5.790	-0.001	165565	0.0170			
						RPD = 4.98			

$\frac{0.5193 \mid 10000}{5.14 \mid .894} = \frac{5193}{4.595} = 1130$

$\frac{1130 - 1530}{1130} \times 100 = 35\%D$

$\frac{.7030 \mid 10000}{5.14 \mid .894} = \frac{7030}{4.595} = 1530$

DC-PD